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STORIES

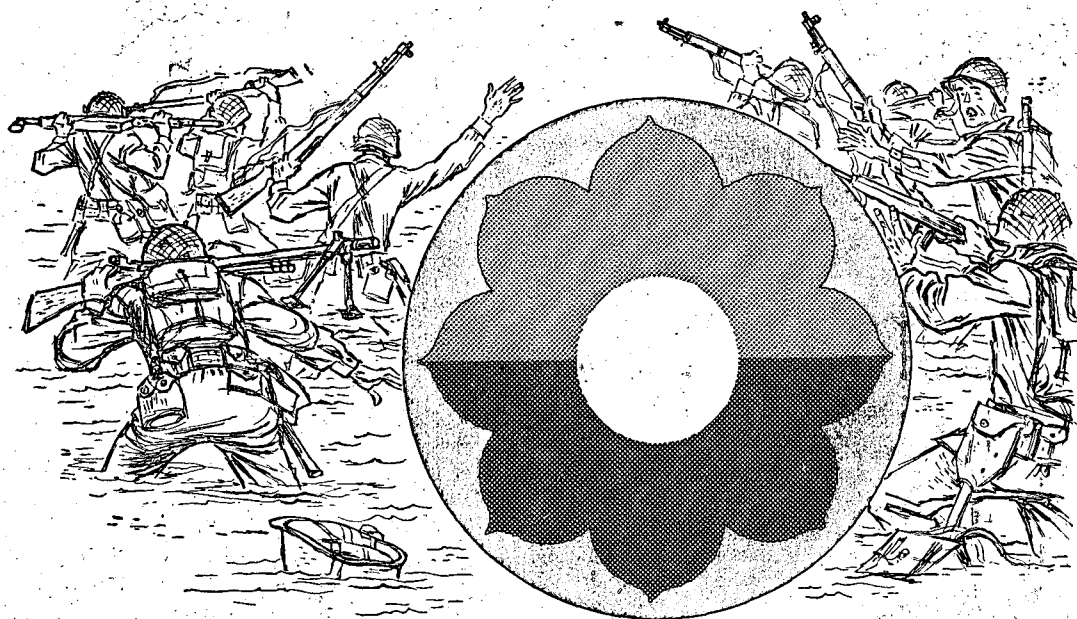


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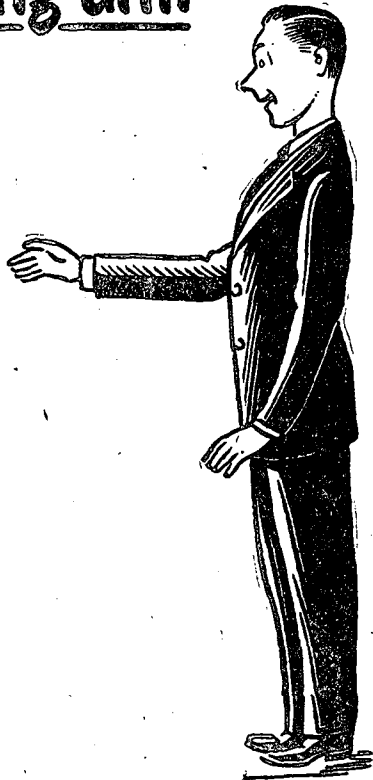
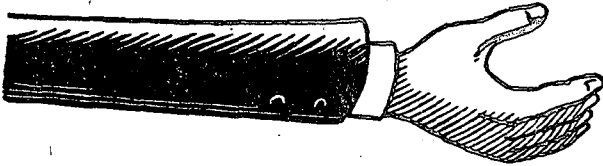
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There was nothing sacred about this piece of land . . . it was just full of holes . . .

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He was only a kid, and he parachuted down out of the sky to have a little fun on Earth . . .

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When the Martians saw the giant spaceship coming, they could not dream it bore their ancestors!

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Dead is not exactly the proper way to arrive—but that's what happened!

Cover painting by Robert Gibson Jones, illustrating a scene from "Starship From Sirius"

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The OBSERVATORY

JAN 26 1963

by the Editor

NO DOUBT you've noticed the cover of this issue, painted by Robert Gibson Jones, illustrating Rog Phillips' "Starship From Sirius" and no doubt you've liked it. But there's one thing you don't know, and that is how much of a treat is waiting for you in that story! You see, it's a sequel to that sensational novel by Rog Phillips, in which the world of the post-atom war was taken apart, analyzed, and presented in all its frightening and prophetic horror, "So Shall Ye Reap!" Just the mere mention of "So Shall Ye Reap!" ought to be enough to launch you out into the story without even finishing this editorial—but you might as well read on, because we've got other interesting things to tell you.

SECOND treat in this issue is "The Venusian" by Craig Browning. This novelet is an unusual one, because it treats with a subject that is truly hard to handle. Let's assume that there are people on Venus so far ahead of us that their only interest in us is sailing by occasionally in their flying saucers and observing us with the curiosity you might evidence in a herd of cattle over which you were sailing in a Piper cub. Now, if one of these Venusians was a kid out to play hookey, and he dropped off by parachute when his parents weren't watching, what would happen when he landed, with the idea that human beings were just plaything put on Earth just to amuse him? Well, what happens you can find out by reading Craig Browning's story.

ONE OF THE MORE unusual type stories is S. M. Tenneshaw's "Holey Land." Holey, we'll tip you off, is a pun. Holey Land is just full of holes, but they are unusual holes, in that they have something living in them. Besides, can you imagine what you'd do if you were building a house on your own land, and every time you got it near finished, a hole opened and swallowed it up? Be annoying, wouldn't it!

DEAD ON ARRIVAL" is our other short contribution for this month. The title is rather obvious, so we won't go into a discussion of the story and its plot—but don't expect the story to be as obvious! Read it and see . . .

MAYBE you'll notice the absence of a good many of our regular features, Discussions, for instance . . . well, that's because of "circumstances beyond our control." That phrase is just about as meaningless as any we've ever heard, but that's exactly the truth. By the way, we've never seen a science fiction story written around that phrase, which seems a natural. Let's take a man who goes off in a time machine, for instance, with the idea of controlling his future. Now, this future would depend on circumstances that happened in the past, which is beyond control. There we have an interesting paradox—here's a man who goes into the future to control the present, which depends on the past, which can't be controlled! Opps, that's getting too dizzy to contemplate. Let some author who's a bear for punishment take up from there. We'll give a prize of a cracked pot to the first author to take us up on this little gem of an idea, and to the next six thousand two hundred and six author's who take up the idea, we'll guarantee a heck of a lot of competition! In other words, forget the whole thing—we were only trying to fill space!

DUE TO THESE "circumstances beyond control" we mentioned, we've had to postpone a lot of the things we'd originally planned for you—including the sequel to "Gods Of Venus" by Richard S. Shaver, and many other special treats—but when they do come at you, they'll come fast and furious—so we predict a whale of a reading future for you . . . it says here in our crystal ball. For instance, there's "The Story Of Da-armadj, The Strong" which we're going to spring on you for its "surprise" value. It's way off our beaten path, and we hope you'll like it! Rap.



THOUGHTS HAVE WINGS

*You Can Influence Others
With Your Thinking!*

TRY IT SOME TIME. Concentrate intently upon another person seated in a room with you, without his noticing it. Observe him gradually become restless and finally turn and look in your direction. Simple—yet it is a positive demonstration that thought generates a mental energy which can be projected from your mind to the consciousness of another. Do you realize how much of your success and happiness in life depend upon your influencing others? Is it not important to you to have others understand your point of view—to be receptive to your proposals?

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Holey Land

by S. M. TENNESHAW

The land was full of holes and
the holes were full of little men . . .





The leader of the little men planted himself defiantly and pointed an accusing finger . . .

IT WAS a hole. There was not doubt about it. The only surprising thing was that a few seconds before there had been no hole there at all.

Horace D. Veblen stood looking at the hole, his lumpy broad face slack with astonishment. He gulped and stepped back. His face went white. He had been standing right at the brink; another step and he would have plunged right into it.

Horace D. Veblen's throat muscles worked, but it was some time before he could get words out. When he did, he roared:

"Larch! Damn it, Larch, I nearly go caught again!" Veblen was a huge man, almost as thick as he was tall, with a billowing waistline and a fat, hairless head. No one could have deduced from his appearance that he was a retired financier.

"Did you see it, Larch?" Veblen gasped.

Nick Larch came hurrying up from the car he had been engaged in locking. Small and mild-faced, he wore a chauffeur's uniform.

"See what, sir?" Larch wanted to know.

"The hole!" Veblen howled, pointing. "The blasted hole! . . ." And then he stiffened in stark amazement.

The hole was gone.

Veblen licked his lips. "It's happened again, Larch. Just as I left the car, a hole opened right up in front of me, and if I hadn't stopped in time, I'd have gone right into it! Damn it—what's it all about anyway!"

"I'm sure I wouldn't know, sir," Larch answered, glancing around helpfully, though he certainly didn't expect to find anything. The boss had a lot of queer habits and notions, but the disappearing hole was a new one to Larch.

Muttering, Veblen turned and stalked off. Larch followed.

From ahead came the noise of pounding hammers and buzzing saws. The two walked on in silence until they came to a large clearing. Lumber and bricks lay piled about in a sort of orderly confusion. Men worked industriously about the climbing skeleton structure of a house.

Veblen gazed about him, rubbing his hands and smiling expansively. "I certainly got a bargain, didn't I, Larch? Imagine it!" Veblen glowed all over. The mere thought of a bargain was the deepest kind of pleasure to him. If he had to spend money, he had to be sure it was a bargain. Veblen had retired from the pleasant task of making money only because the concern of which he had been president had been losing it. It would not have been an exaggeration to say that Horace Veblen would have killed off the whole of his relatives if he thought he could make anything out of it. His one passion and worry in life was—money.

"Yes, sir, it sure was a bargain," Larch echoed, looking around. But there was a frown on his face. That was the trouble—the estate *was* a bargain, a tremendous bargain, in fact, too big a bargain. Certainly it was worth much more than the insignificant amount Veblen had paid for it. Larch found something highly suspicious in the fact that the real estate agent had been so eager to sell the land.

"Ah, there's Halleck," Veblen growled, as a man in whipcord breeches and leather boots approached.

Halleck looked worried.

"How are things goin'?" Veblen asked.

"Everything's going along nicely, Mr. Veblen," the foreman announced. "Your house will be finished in a few more weeks. But, well—er—you see, well, we *have* been having a little trouble lately."

"Trouble?" Veblen lost what little good humor he had left. "What kind of trouble?"

HALLECK glanced about uneasily. "We-e-el, that is—you see, er. . . . Damn it, the truth of the matter is that this place is filled with holes! Or rather, holes when you first see them. I really mean that the holes come and go. . . . I know it sounds crazy, but. . . ."

"I know," Veblen sighed heavily. "I've seen them myself. And I nearly fell into a couple of them. Don't worry about it though. It's probably just a lot of stuff and nonsense. Hallucinations. I think there must be a fissure around here from which gas is escaping. Anyway, it's just our imagination."

Halleck looked relieved. "I hope so," he muttered. Then he gasped loudly and tottered backward. Veblen grabbed wildly at thin air.

A hole yawned beside them.

This time Larch saw it. He gaped, his eyes bulging a little.

It was quite a large hole, a little more than ten feet in diameter. Its sides, what could be seen of them, were perfectly straight and smooth.

Larch may have looked small and meek, but in times of stress he acted all out of proportion to his size. He acted now. He rushed to the edge of the hole and peered down. One glance was enough. There was no bottom to it. At least as far as he could see. Its smooth sides merged into blackness at an unguessable distance down.

Larch looked wildly about him for a stone. There was one sure way of finding the bottom to it. But when he finally found a stone, the hole was gone. It had vanished with the completeness and abruptness of a snowball in Hades.

Halleck groaned. "That's the way it always is. One minute you see it, the

next you don't. O-o-o-ohh!"

Another hole suddenly yawned beside them. Larch stepped forward grimly, clutching his stone. But he didn't throw it. Instead he stared.

Something about his expression impelled Veblen and Halleck to come forward and peer curiously into the hole. They stared. Halleck almost fainted.

It was incredible, unbelievable, fantastic! But it was true.

In a precise parade, a dozen tiny men were marching up the sides of the abyss.

They were none of them more than two feet tall, and all of them wore beards that fell nearly to the tips of their pointed shoes. But the beard to end all beards was worn by the leader. It was thick and grey and so long it dragged three feet behind him like some limp tail.

"Elves!" Larch whispered incredulously. "Those things are elves!"

"Remarkable deduction," the leader of the tiny men chirped. He emerged from the hole and stood straddled on the brink with folded arms, regarding them solemnly. His men gathered about him.

"Gug—gug!" Veblen gasped. "Is it real?"

"Certainly it's real!" the tiny leader snapped. "But I didn't come up here to discuss personalities. I've got more serious things to attend to. First of all, my name is Greybeard, and I'm the leader of the American branch of the Elf League. We migrated here a couple thousand years ago—before the Indians and that guy called Columbus even heard of the place." He paused to arrange his beard in a neat little pile around his tiny feet. Then: "We've been creating those holes you seem so unconcerned about, for a reason. To put it bluntly, we've been trying to scare you off this land."

"So!" Veblen managed to roar. "You were making those holes! What the hell's the idea?"

"The idea," Greybread sniffed, "is to prevent you poor fools from committing suicide. This piece of land happens to be the most dangerous spot in the whole world."

"Yeah?" Veblen snorted. "How so?"

Greybeard tensed. "Below this stretch of land lies a creature known to you humans as a demon. He's been imprisoned here for centuries, and we've had to see to it that you humans don't come messing around. By even living in this vicinity you're making it possible to set him free. If he ever does get free, well, to put it in your own language, all hell will break loose—and incidentally, this demon, Kargool, has a favorite pastime, eating humans!"

VEBLEN curled up his lip in contempt. "Fooey! You can't frighten me with such fairy tales! Stuff and nonsense! Demons? Bah!"

Greybeard shrugged his tiny stooped shoulders. "Well, I've warned you anyway," he said. "We can take care of ourselves. The only thing we're afraid of is that if Kargool ever does get loose again we might not be able to trap him like we did before. Anyway, we wash our hands of it if you don't take our advice and scam out of here, pronto!"

The little man turned and descended back into his hole, his beard and men trooping silently after him. Shortly, the hole closed, and nothing about the ground was left to show that it had ever been there.

"Now I know why that land agent was so eager to get rid of this piece of land," Larch muttered.

"Huh?" growled Veblen. "What're you mumbling about?"

"The elves, sir," Larch answered. "They scared off the other buyers until at last the agent was willing to let go for a song just to get rid of it."

"Well they can't scare me!" Veblen shouted. "I bought it and I intend to keep it. My money is too good to waste on a lot of fairy tales! Halleck, you get busy on the house. See that the men don't waste any materials."

Halleck gulped. "Yes, Mr. Veblen," and hurried away. He neither looked nor felt well. He had seen and heard enough to give him the jitters for a long time to come.

"And you, Larch," Veblen went on. "Drive me back to town. You'll be late with dinner as it is."

Larch sighed to himself and started back for the car. He was valet, cook, butler, chauffeur, and housekeeper all rolled into one for Veblen. It was not the ex-financier's habit to waste money on superfluous hired help when he could get one man who was capable of attending to all of the duties. Nor was Nick Larch overpaid.

IN THREE weeks, Veblen's new house was finished. Strangely, he did not seem excited about it. A cunning, curiously excited gleam had come into his eyes, and he had become very secretive.

Halleck commented upon it to Larch as they stood one day, looking at the completed structure.

"Funny, the way the boss has been acting lately, isn't it?" he said.

"Yeah," answered Larch. "Like he found something pretty important. I've caught him once or twice laughing like a loon to himself, and rubbing his hands together. I wish I knew what it was all about."

"It's a mystery." Halleck rubbed his jaw. "And what about those elves? We haven't seen or heard of them since

they popped up out of the ground three weeks back. I wonder what they're cooking up now. They ought to know we don't believe that goofy demon yarn."

"It might be true," Larch said. "I've seen enough lately to almost make me believe anything."

Halleck shrugged. He looked at the house, and a glow of pride leaped into his eyes.

"Swell dump, isn't it!" he said. "You'd hardly believe that I built it on the cheap material the boss made me buy."

"Not bad," Larch agreed. "Oh, my Lord! Halleck—*look!*"

Halleck looked. And then he folded up like a wet rag.

A moment before a house had stood there. Now it was gone.

The grand-daddy of all holes had swallowed it.

When he was able to move, Larch ran in search of his employer. He blurted out the news of this latest catastrophe. But Veblen didn't blink an eyelash.

"What? House fell in a hole? Oh, that's nothing."

"N-nothing, sir?" Larch stared.

"Not now, Larch," Veblen suddenly grinned widely. "A few weeks ago I discovered something—there's gold on this land! Do you hear? GOLD!"

Larch heard, and he reeled dizzily.

"Gold!" Veblen breathed. "The whole place is filthy with it! I'll be the richest man in the world!" He rubbed his fingers together so hard that Larch smelled smoke from the friction.

THE same day, mine engineers and workers came down from the city. They began to sink a shaft. The stretch of land upon which Veblen had intended to build a house took on the appearance of a California gold-rush

camp.

Gold came out of the mine in tons. Veblen's grin was present so much that Larch feared it had grown in permanently.

But Larch was not dazzled by the glittering metal. He remembered the warning of Greybeard and the horror the elves had said lay buried in the earth—Kargool.

Gold kept coming out. And the mine grew deeper and deeper.

And then one day when the mine reached a depth of three hundred feet, something happened. Veblen was supervising operations in his usual domineering manner, and had just come to the surface to check the current production on his chart. Behind him, from the entrance to the shaft Veblen heard a roar. It was a sound which might have come from the depths of hell itself. It was an earth-shaking roar. The force of it threw Veblen to the ground.

Larch came running up.

And then out of the shaft came the crew. They were running so fast their feet barely had time to come in contact with the ground. And behind them came a thing.

It was a monstrosity indescribable. Larch fell back in sheer horror. Veblen couldn't find the power or the strength to fall back. They both stared.

It was half animal and half man, but it was neither. It had long shaggy hair and enormous tusks protruding from a cavernous abyss that served the purpose of a mouth. It had horns and a tail. And a funny leathery looking bag hung from a cord around its neck. But most of all it had a look in its single, blood-red eye that promised trouble for anyone who crossed its path. It came rushing out of the tunnel with all the grace and speed of a runaway locomotive.

Larch starred aghast. The creature let out a shriek and swept a massive arm downward. One of the men of the crew had the misfortune of being in the way of that arm. He screamed once. But then he didn't scream any more. The thing stopped its wild dash, squatted in the entrance to the mine shaft and calmly proceeded to eat. . . .

Larch suddenly became very sick. With a hoarse cry, he jumped to his feet.

"My God!" he croaked. "It's the demon—Kargool!" He turned savagely to Veblen. "Now maybe you'll believe what Greybeard said! Now that it's too late!"

It was sometime before Veblen found his tongue.

"How was I to know it was true? Demons aren't supposed to exist. . . ."

Larch gritted, "I suppose that's a pink elephant squatting in the mine shaft!" Then suddenly he remembered the elves. "We've got to find Greybeard before it's too late! He's the only one who can help us now!"

LARCH began to run from the mine. Veblen puffed after him. Larch didn't know where he was running. He didn't care much. He was looking for something. Something that wasn't there. Suddenly it was.

It was a hole. It yawned before Larch's feet and he was hardput for a few seconds in keeping his balance. Veblen panted up beside him and together they starred down into the orifice.

Greybeard came into view, stalking up the side of the hole. There was an angry glint in his eye as he confronted Veblen.

"So! You didn't believe me after all! And now look what you've done!"

Larch glanced back toward the mine. The demon had finished his meal

and was proceeding to engage itself upon a rampage. It let out a deafening roar and dove across the ground after the rapidly fading figures of the crew. It crashed into trees, up-rooting them. It set huge rocks rolling from its path and once, tripping over a stump that got in its way, dug a furrow for a hundred yards before it got control of itself. Larch shuddered inwardly and turned to Greybeard.

"What can we do?"

Greybeard scratched his beard. "There's nothing much we can do. We bottled Kargool up a long time ago. He'd been terrorizing the whole countryside for a couple centuries before we managed to lure him into our trap. We only did that by a trick. And that trick won't work again. I warned you what would happen if you persisted around here. Kargool planted that gold on purpose to get your eye. He knew you'd dig for it. And he knew you'd dig him out eventually. You did."

"But what are we going to do?" Veblen had lost some of his self-confidence. "What'll that demon do now that he's loose?"

Greybeard shrugged. "Probably proceed to eat every available human around here. That's his one pet delicacy. And too he's pretty sore about being cooped up all these years. He's pretty hungry by now."

Veblen knew. He had seen. But then Veblen suddenly saw something else. The demon abruptly materialized around a bend in the road leading away from the mine. Veblen wouldn't have cared so much but the thing was rushing like an express train straight at them.

"Let's get out of here!" he yelped.

Larch grinned sickly. "Yes. Let's get. But where?"

Veblen starred wildly about him, mentally viewing himself as the major

part of a dinner from which he would derive no benefit.

"Quick! Follow me!" Greybeard shouted and dove back into his hole. Larch took one last look at the horror rushing down upon them. It was do or die. Larch did. He dove after Greybeard. Behind him, Veblen let out a screech of terror. Then he dove too.

The demon screamed triumphantly as he hurtled through the air at the hole. He hit it. But not the hole. For suddenly there wasn't any. The demon found itself plowing through solid earth, a not too delicate cushion. It howled in pain and frustration.

Inside the hole Larch breathed a sigh of relief. That had been a close scrape! Then he glanced around him.

The interior of the hole glowed with a queer green light. It came from everywhere and made Larch feel as if he were on the inside of a test tube looking out. They were standing on a ledge jutting out from one side of the hole. Larch looked over the edge of the ledge and got dizzy.

"We're safe enough in here." Greybeard leaned back against the ledge. "He'll wear himself out up there trying to dig down to us."

"A mighty poor piece of security." Veblen grunted sullenly.

"If there were only some way we could trap him." Larch echoed. Then: "What was that queer thing he had strung around his neck?"

Greybeard looked up. "That unfortunately is the only place he's vulnerable. That's a leather bag lined with elf-down. In it is his soul. If we could get that he'd be at our mercy. But as well try and take hell away from the devil."

Veblen had begun to regain his self-composure. This last revelation completed the job.

"You mean that the person who has

that bag controls the demon?"

"That's what I mean." affirmed Greybeard. "We've been trying to think of some way of getting it away from him for centuries, but with no success."

VEBLEN was thinking just then how nice it would be to possess that bag, if what the elf said were true. With control over such a creature a man's power would be unlimited. . . . Hmm?. . . . How could he manage to get the bag? . . .

A crafty gleam entered Veblen's eye. He thought swiftly. And a plan began to take shape in his mind. He turned to Greybeard.

"You say our troubles will be solved if we can get ahold of that bag, eh?"

Greybeard nodded.

Larch glanced curiously at his employer.

"What have you got on your mind?" he asked.

Veblen smiled queerly. "Nothing much, only I think I can get that bag. . . ."

"What!" Larch tensed. "How do you figure that?"

But Veblen only smiled and waved a pudgy hand non-committantly. "I told you I've got an idea. That's all. It might work, and it might not. But it's a damn sure thing we'll have to try something soon. We can't stay cooped up in here for the rest of our lives!"

Greybeard shook his head.

"It can't be done. We've tried everything to get that bag away from him. It can't be done. . . ."

"Well I intend to try." Veblen was final. The idea that had begun to take shape in his crafty mind was now a definite plan. He turned to Greybeard.

"I want you to open up this hole and let me out."

Larch stared. "Are you crazy? As soon as that thing spots you you're

done for! You remember what happened to the crew?"

"My memory is quite up to date." Veblen answered drily. "But I intend to get that bag anyway."

But Greybeard thought otherwise.

"You can go up if you please," he said. "I don't know what you plan to do but if by any chance you do succeed, bring that bag down here. Then we'll fix Kargool's goose for once and for all."

Veblen nodded, smiling. Larch didn't like that smile. He had seen it before, and always something had happened afterward—that benefited Horace Veblen but nobody else.

"Open up then." Veblen turned to Greybeard. Greybeard shrugged his tiny shoulders and pointed upward.

Veblen looked up at a small narrow path that had suddenly materialized. He straightened his shoulders and began to climb. When he reached the top, the roof disappeared and he found himself facing the outside world.

And Kargool too.

Veblen lost some of his confidence as he looked into that terrible face. Something red was drooling out of that cavernous mouth, and Veblen shuddered as he glanced upon a wicked set of tusks, yellowed and horribly suggestive.

KARGOOL was taken aback for an instant by Veblen's audacity. It was a novelty in Kargool's existence to have a mortal deliberately face him. But the novelty didn't last long. With a roar and a rush he bore down upon the quivering figure of Veblen. Veblen raised a pudgy arm shakily and shouted as loudly as he could under the circumstances.

"Stop! Wait! I've got a bargain to make with you!"

Kargool stopped. And just in time. Another second and Horace Veblen

would have been sausage. Kargool glared out of his huge red eye.

"WELL?" he thundered.

Veblen swallowed hard and stepped forward.

"If I understand correctly, your—er—appetite is quite enormous. . . ."

"And then some," the demon thundered.

"And," continued Veblen, craftily now, "I understand you like humans especially. . . ."

"SO?" Kargool, so far, was not impressed.

"I think we can be of use to each other."

Kargool lifted his single eyebrow.

"How?" he demanded.

Veblen warmed to his subject. "I suppose you have certain powers—er—magic, and things? . . ."

"So what?"

"Well, could you use your powers to obtain—money and things? . . ."

"Naturally." Kargool began to get curious now.

"Well," said Veblen, "I was just thinking that alone you wouldn't stand a chance of getting enough humans to satisfy your appetite, and. . . ."

"Why not?" Kargool thundered.

"Because in this modern age people don't believe in demons and besides they have powerful weapons that would blow you to atoms in a flick of a finger!"

"Hmm." Kargool stroked his shaggy, blood-streaked beard.

"So," Veblen pressed his point. "I was thinking that if we teamed up, I could get you all the humans you'd want—and you could exercise your powers in various ways for me. . . . Whereas you won't stand a chance alone. . . ."

"Ah!" said Kargool. "But where would you be able to get these humans for me?"

A crafty glint entered Veblen's eyes.

"I've got a formula that works like nothing you've ever seen!"

"A formula?" Kargool was definitely interested now. This was right up his alley. "What kind of formula?"

Veblen looked around furtively, as if afraid someone would hear him. Then he leaned forward to whisper in Kargool's ear. The demon bent forward interestedly. Veblen's stomach squirmed from the demon's close breath. He cupped a hand to his mouth and bent his head.

But his other hand wasn't idle, for, suddenly his fingers curled around the leather bag the demon wore around his neck. Then he leapt backwards, yanking with every ounce of strength he had.

KARGOOL howled with rage as he realized what was happening. But he was too slow to prevent it. With a sharp snap, the cord binding the bag broke. Veblen staggered back gripping the bag triumphantly. He squeezed it hard.

The demon's roar of rage changed abruptly to one of exquisite agony. He rolled on the ground clutching at himself in terror and pain.

Veblen laughed gloatingly.

"Fell for one of the oldest tricks in the book!"

Behind him Greybeard and Larch scrambled out of the hole. They glanced at Veblen in wonder.

Greybeard fairly danced.

"Quick! Give me the bag before he recovers from the first shock. We've got to work fast!"

Veblen sneered. "Give you the bag, hell! I didn't go through all this trouble for nothing. This demon is going to make himself useful to me from now on—or I'll squeeze the bloody hell out of his soul!"

Greybeard stiffened. "Give me the bag. I'm warning you. . . ."

But Veblen was not in a giving mood. For suddenly Kargool stopped his howling and rolling. Rage and frustration glittered in his single red eye. He screamed crazily and rushed upon Veblen like a tornado gone berserk.

Veblen squeezed the bag for all he was worth—but the demon kept coming. Fear suddenly paled Veblen's face. Whirling, he began to run as if the devil himself were at his heels. Kargool was at them reaching out with a massive clawed hand.

But too late—Veblen felt a terrible paw grip him by the throat. He screamed hoarsely. But not merely because of the pressure on his jugular.

It was the hole. It was the biggest hole Veblen had ever seen. And it yawned down to bottomless depths. He was falling down it with ever increasing speed. The grip on his throat suddenly loosed but Kargool was right behind him, falling too. . . .

* * *

The hole was no longer a hole. It was whole. Greybeard and Nick Larch stood on the spot where the hole had been.

"What happened to them?" Larch asked.

Greybeard shook his head somberly.

"I warned him. It was the only thing I could do. And the only way to get rid of Kargool at the same time. They are in the hole, falling. And they'll keep on falling."

"But what will happen when they land—won't that demon find a way out?" Larch was pessimistic.

But Greybeard gestured confidently. "Kargool can't get out without his bag. And Veblen has that. And Veblen is falling too. They won't ever land." He smiled. "A thing can't very well land in a hole that has no bottom—can it?"

THE VENUSIAN

by CRAIG BROWNING



Sam Johnson stared through the snow at the parachuted figure from the sky.



He was just a kid on a lark,
but Earthmen were only toys to him!

SAM JOHNSON stumbled through the drifts along what he hoped was the road, head bent forward to keep the blinding swirls of snow out of his eyes, his heavy brown coat tucked up around his neck and his hat pulled low over his ears.

For two days now the storm had praged unabated. He was taking his

life in his hands even to step out of the comforting security of his house, let alone go the mile and a half to the south pasture; but the cattle there, cooped up now in the ramshackle old barn, would bring better than five thousand dollars in the spring and he couldn't afford to take any chances. Anyway the road was marked on

either side by an almost continuous stretch of barbed wire fence, so there was little likelihood of his wandering off and getting lost.

The wind made moaning noises, and now and then an almost solid avalanche of snow would come driving down through the dancing, gyrating flakes that blended into a white wall twenty feet away.

~~Sam cursed the snow, and cursed the system that made him put desire for money ahead of desire for life and comfort. He did not delude himself~~ into thinking he was making this trip out of concern for the comfort of dumb cattle. He had paid good money for the cattle, and expected to make a good profit in the spring. The death of one yearling would cut this profit down by several percent, and that was all that concerned him.

The driving snow played tricks on his eyes. He had only gone fifty yards from the house when he could have sworn he saw a shapeless blob that might have been a man all bundled up with a glass globe over his head drop out of the sky near the side of the road, a huge expanse of parachute breaking his fall and then billowing in the wind. He stopped and looked intently at the spot, but finally decided he must be wrong.

After that he could look off to the side of the road and see parachuted figures dropping out of the sky any time he wanted to, so he knew it had been a delusion. He knew that it would almost certainly be suicide to climb over the barbed wire fence into the field. Once there, he would instantly lose his sense of direction. As it was, about every fifty yards he ran into the fence on one side of the road or other. Each time he did he blessed it fervently and climbed back into the road.

The newly-fallen snow was waist-high in some places. In others the ground was almost bare where the driving force of the wind had picked up the dry crystals and flung them back into the sky. Sam's nose began to grow numb, and his cheeks tingled as skin cells froze and cracked open.

It took him over two hours to make the mile and a half to the south pasture. At that he almost went by the old barn before he saw it.

Inside he counted the cattle and sighed with relief and satisfaction. Every head was there out of the storm. It took him an hour to go over everything, dump more grain in the feed troughs, pump the watering trough full again, and get down a ton or so of hay and spread it around so that the cattle were almost covered with it. He didn't plan on returning until the storm had blown itself out, which might take another week.

It took him almost three hours to make the journey back to the house, so he had been gone almost five years in all. He knew Jenny would be worrying her head off, pacing the floor and wringing her hands while she moaned for sympathy from their two daughters, Mary and Martha.

They were two of a kind. Sam sometimes wondered if they were his rightful offspring. Mary was twenty now, and Martha eighteen. They were handsomer than any movie stars he had ever seen, and twice as smart. They had come home for Christmas from the state college. That was a week ago.

When they had come, in their fine city clothes and with their hair all done up by professional beauty specialists, he had felt sort of humble that and Jenny were uncouth and plain—just farm folks. He marveled each they could do such a fine thing. He

time one of his daughters smiled at him. He never thought of the fact that it was his hard work that got the money that had made them fine, educated, city girls. It would never enter his thoughts because it was his right and his duty toward them. He was that kind of a man, too.

SAM reached the gate that led to the house and fumbled with the latch. He worked the gate through the snow far enough so that he could slip through, then closed it quickly before snow could drift in and make a job out of it.

The lights in the windows were bright and cheery. He put all his reserve into making the last ten yards to the back door. He was glad now that he had enclosed the back porch last summer. He could take off his wraps and hang them outside before going into the kitchen.

He pulled off his heavy overcoat, revealing his broad, heavily muscled shoulders and handsome Norse features. Then he pulled off his boots. After that he took off his crumpled hat, revealing a high forehead, with blond hair combed straight back.

Basically humble in his thoughts, he would have laughed at anyone who might have told him he was a throw-back to the race of Norsemen who had once come out of the north to subdue the British Isles, cross the stormy Atlantic, and fight the elements all around the Arctic Circle.

He could not know that the queenly bearing and grace of his two daughters were inherited from him, and that their beauty and grace were a heritage denied most movie stars. Sam thought that genes were something that thoroughbred cattle had—not the shuffle of racial tarot cards which, in the cycles of racial history, had repeated

themselves in him and his daughters, so that they were as the Norse people of old.

Divested of his heavy wraps Sam gave a thankful glance toward the stacks of wood at the far end of the porch, estimating that there was enough to ride out the storm, then twisted the knob and opened the door to the kitchen.

He looked in, anticipating the first sight of his daughters, basking in advance in the looks of fond affection they would turn his way. Then his eyes widened in surprise, and his six-foot-four of manly strength stiffened into immobility. He stood that way for perhaps fifteen seconds, then toppled forward.

THE speedometer needle hovered near the eighty mark. The driver, a thin, chisel-faced man of about forty, paid no attention to it, but kept his eyes flickering from the road ahead to the image of the car behind in the rear-view mirror.

The car in back had been slowly creeping up for the last five minutes, and now was only half a block away.

Up ahead a heavy coupe with lots of chrome was creeping along at a mere forty. The driver of the car looked at it intently as it grew larger, and finally nodded his head.

"That's it," he said. The car leaned slightly as he swerved to the left to pass the coupe.

"Now?" The voice was that of the heavy set man in the back seat.

The driver nodded his head, but said nothing. The man in the back seat pressed a button. The complicated looking machinery clamped against the back of the car began to move silently. A long barrel of steel with an opening nearly an inch across changed directions slightly. A keen observer would

have noticed that it pointed and moved independent of the car's bouncing and swaying. It was gyroscope controlled.

Suddenly there was a cannon-like explosion. At the same instant the left front wheel of the pursuing car seemed to vanish along with a goodly part of the fender. Then the car behind dipped slowly to the left, rose lazily until it was standing on end. After that it turned a quarter of the way around and fell forward on its side, bouncing a couple of times in slow motion.

The man in the back seat looked over his shoulder at the driver and grinned.

The driver slowed down to forty and pulled a cigaret out of his vest pocket. He lit it with a kitchen match, ignoring the lighter on the dashboard.

THE coupe pulled to the side of the road just behind the wrecked car. The young lady who climbed out and rushed toward the wreckage was twenty-two, five-eleven, and was in the habit of being mistaken for a movie star every place she went. People asked for her autograph without knowing who she was, convinced that she must be somebody important. Perhaps the star of the latest premier they hadn't got around to seeing.

She reached the wrecked car just as a blond, masculine head poked its way through a broken door window.

"Thank God you're alive," she exclaimed. "Are you hurt badly?"

The head ignored her for several seconds, peering up the road after the fleeing car. Then it jerked around in her direction.

The eyes widened as they took in the girl's classic beauty. Automatically the lips formed to emit a whistle. Then awareness of the situation took hold.

"Help me get out of here if you can," the head in the window said. It accompanied its request with a series of violent moves which succeeded in lifting the battered door into an upright position. Then it emerged, followed by a pair of wide shoulders and husky arms covered by well-tailored gray tweed.

A final burst of movement brought out the rest of the man, who leaped to the ground and hastily grabbed the girl's arm.

"Quick," he said. "They mustn't get away."

She caught on instantly and almost beat him to her coupe. Automatically she climbed in on the driver's side, and he, after a moment of indecision, decided there was no time to argue, and climbed in on the other side.

She was good. She had the car in motion almost before he was in, and the door slammed shut from the burst of forward acceleration as the coupe took the center of the highway and picked up speed.

The car ahead had disappeared around a bend in the road. When they reached the bend the highway stretched ahead for ten miles, but no car was in sight.

"What do we do now?" the girl asked, letting up on the throttle. She flashed the young man a smile.

"Nothing much to do," he answered. "You can just let me out at the next town and I'll get a wrecker. It was awfully good of you to help me like you did."

"Think nothing of it," the young lady replied. "If you'd rather go back to the city, I was just out for a drive and had just about decided to turn around and go back anyway."

"That's lucky," the young man said. "I guess there's no hope of picking up the trail of that car again. By the

way, my name is Steve Kaiser."

"Pleased to meet you," the girl smiled again. "I'm Mary Johnson. I have a book and gift store on Broadway. I'm afraid it runs itself, most of the time. At least I pay very little attention to it."

"You don't mean the Looking Glass is your store!" Steve exclaimed.

"Mm hmm," Mary nodded, her eyes and hands busy at turning the car around.

"I've been in there," Steve said. "I don't doubt that it does run itself. You have a very competent bunch of clerks in there. They're so eager to please that sometimes I honestly believe if I asked for a book that had never been published they would get it published within twenty-four hours so I could get what I wanted."

"Oh, now," Mary laughed. "They aren't *that* good, but they all take the business very seriously. They should, because they work mostly on a commission basis. I've found that works better than straight salary."

STEVE glanced appraisingly at Mary's slim figure and obvious youth.

"You seem pretty young to have built up a big store like that on your own," he speculated. "Inherit some money?"

Mary straightened the car and started back toward town before she answered.

"Not exactly," she finally said. "I just followed directions. Good business advice and all that. It doesn't take much to go into business. Most wholesalers are more than anxious to play ball with a new concern to help it get started."

"Especially when the new business has such an attractive owner," Steve said, smiling at her.

"Hmm mm," Mary pouted her lips. "They all saw I had good business sense. By the way, what do you do for a living besides chase automobiles that carry small cannons to shoot people with?"

"That's about all," Steve said wryly. "You see, I'm connected with the government in a way."

"Oh?" Mary arched her eyebrows.

"It's not the F.B.I. or the secret service, or anything like that," Steve said. "As a matter of fact it's too long a story to tell in just a few minutes."

"Yes I will have lunch with you tomorrow," Mary said, smiling mischievously.

"Boy, you're way ahead of me!" Steve exclaimed.

They both laughed.

"I SHOULDN'T tell you any of this," Steve said, holding his lighter to Mary's cigaret and then to his own. They were at an exclusive table for two in the Old Heidelberg. It was nearly three o'clock, and most of the lunch patrons had left. "You see, it all started coming to light about a year ago. We don't know what it's all about even yet, but we do know that something terrible and sinister is going on, and our job is to get at the root of it, if we can. By *we* I mean me, and several hundred men who were chosen because of their past records and fields of training. During the war I was in the secret service. I came out alive, which is enough recommendation. Among the others are some of the most outstanding geniuses in different branches of physics and radio, and other specialists too numerous to mention. That will give you some idea of the scope of this thing."

"But what is it?" Mary asked.

"I told you we don't know," Steve

said. "All we know is that certain strange things have happened. Huge sums have disappeared from banks. There werent any robberies in the usual sense of the word. Checks cashed which, when the auditors got to them turned out to be perfectly blank. Chemical analysis showed not even a scratch to indicate how they had been made out. Other checks cashed which grew dark and uniformly silvered in a matter of minutes after the teller paid out the money. Altogether it has been determined that over fifteen million dollars has disappeared in this way.

"If that were all, we wouldn't be alarmed. It would just appear to be a band of crooks who had figured out a new racket. But there has been top secret leaks in government circles. When we found out about it we, or rather the secret service, put every kind of system to work to find out how it was done. We found out, all right. Every word that was uttered in secret session was being broadcast by radio right from the chambers. Since there was no radio that could be found we put the directional finder right in the chambers themselves and found out that a senator above suspicion was the broadcasting station.

"We searched him. No radio. He took off his coat for the search. The directional receiver located the set in his coat. We tore the coat apart. The inner lining was a broadcasting set of incredible power! Circuits were silver paint in the fabric. The power source was a high voltage battery whose plates were dots of chemical on either side of the fabric and whose electrolyte was a chemical in the cloth under or between the dots.

"The tubes—well, it didn't have any tubes, but it had something strictly out of this world in place of tubes.

That's when this new group was formed. Some of our experts have been working on that coat for six months in an effort to find out the principle that eliminates the need for vacuum tubes and spark gaps in broadcasting.

"The senator was entirely innocent. He bought his suit from a tailor who solicited his business and offered very low prices for very expensive suits. When we got to the tailor he had closed shop and couldn't be found.

"Those are some of the minor things. There's the note sent to the Russian government by the State Department which was a request for some minor matter to be ironed out, which reached Stalin with its seal intact and its contents seemingly undisturbed. But the note Stalin got was a declaration of war, with hostilities to start in twenty-four hours if he didn't get every last man of his troops off Korea in that time. He got, fortunately. We didn't find out what was in the note for two weeks, and the State Department would have been nervy enough to pull a stunt like that."

Steve paused a moment, frowning.

THAT would have been all right, too, if we could have been sure that the writer of that note meant things to turn out that way. If we could have been sure, and could have found him, we would have drafted him into the State Department at once. But it looked too much like an attempt to get us into war with Russia. From what we knew then it would have been much more probable that Stalin would have countered the threat by dropping a couple of his atom bombs we knew he had. It isn't generally known, but Russia already equals us in atom bombs. The general public would go into hysterics

if they knew.

"There are other things, too. In the past six months seven of the nation's top notch scientists have disappeared. Eleven others have died under mysterious circumstances. Besides those, over a hundred persons have disappeared who all have one thing in common—they are nationally known in their fields which range from radio to surgery. How many others have vanished that we don't know about yet because they aren't outstanding enough, we may never know."

During all this Mary had been listening attentively. Now she asked, "Why do you tell me this if it is secret? What if I were to tell it around?"

"I don't know," Steve said slowly. "A hunch, maybe. You have a business that takes care of itself. I could see at once that you like excitement, and I thought maybe you might like to be one of our agents. Oh, I know it sounds scatterbrained. I don't have any authority to put you on the payroll. You wouldn't get paid. But if this leads to what I think it will, we need all the help in the world."

"What do you mean, 'what it will lead to'?" Mary asked, puzzled. "What *will* it lead to?"

"God only knows," Steve said gravely, "but I have an absolute conviction, and I'm not the only one, mind you, that behind all this is an alien intelligence. I don't mean Russian or Chinese. Nothing like Fu Manchu or fifth columns."

"Then what *do* you mean?" Mary asked patiently.

"Extra-terrestrial," Steve answered quietly.

"What makes you say that?" Mary asked, sitting forward in her chair and leaning her elbows on the table.

"Little things," Steve said, shrugging. "Things that just don't have the

feel of humanness about them. Like that broadcasting set painted on the lining of the senator's coat. It wasn't like something some genius thought up. It was more like something evolved by an industry over a decade after making millions of them, giving the thing a refinement here, a slight change there, and so on. The cloth itself was terrestrial. So was the silver, although nothing we have in the way of silver paints would leave quite the same deposit. We can't know what solvent or liquid was used to carry the silver when it was fluid. That evaporated completely. The thing was more like a radio would be if some expert built one from raw materials on a desert island. The know how is there, even though the resulting set wouldn't have the stamp of mass production on everything down to the lugs the wires hooked into. That's the way that broadcasting set was. I saw it. It wasn't printed, like the circuits on our vestpocket receivers are now. It was drawn with instruments. But it wasn't a trial and error attempt. It was designed to broadcast on a given frequency at a certain power."

"IT SEEMS TO ME," Mary said seriously, "That you are picking the most improbable of explanations. We already have postcard radio circuits. Couldn't any good technician design and build such a set?"

"Not without using tubes," Steve replied.

"Suppose he invented a tube substitute?" Mary suggested. "After all that is the next logical step in radio, isn't it? Why not stick to probabilities?"

"I can see you have a great deal of good common sense on your side so far," Steve said admiringly. "However, I haven't told you everything yet.

I admit that that radio *might* have been invented by a man, but there are things that couldn't possibly have been made by any man. For example, the intelligent spider."

Steve chuckled at the expression of incredulity on Mary's face.

"He spun a web over the President's pillow just a few minutes before the President was accustomed to go to bed. It so happened that the President saw him begin and watched him while he did it. He thinks the spider kept an eye on him, but as luck would have it, the President had been dozing in an arm chair just a few feet from the bed. He woke up like people do sometimes, without moving a muscle. He just opened his eyes a little, his senses alert. He saw the spider climbing up the woodwork at the head of the bed, fasten a thread and climb down, walking across the pillow. There he pulled the thread tight and began to weave the web. He did it hurriedly, and the President swears he felt the eyes of the spider look at him constantly.

"When it looked like the spider was almost finished the President pretended to wake up. Like a flash the spider was gone. Experts were called in. They all declared the web was not the same pattern as that used by known spiders. The web was carefully taken down and analyzed. No trace of any kind of poison or germ was found, but the chemist who began the analysis died horribly before he completed it. Other chemists completed the analysis without injury, so it is assumed that the first chemist must have let the web touch his skin!"

"I see what you mean," Mary said slowly. "It would take an intelligent spider to know just where to place the web. Assuming it was a terrestrial spider, he would have spun a web of

ordinary design. *But,*" Mary exclaimed, "if the web was poison, why didn't it kill the spider?"

"There is our strongest evidence in favor of another planet," Steve said. "We have rattlesnakes, centipedes, and other animals on Earth who carry deadly poisons in sacs without harm to themselves. Even spiders have poisons; not deadly ones, but some, like the *black widow*, can kill if they bite in the right places. Suppose we have a spider who can weave a web and spread a poison over its strands as it goes along? It's a logical evolutionary step."

"Hummm," Mary said slowly. "So it is. I think I'm beginning to believe you."

"I'm glad you are," Steve said fervently. "You see, I got through the war by following hunches. There was the time I was sure I had success at my fingertips on a secret mission. I was sure I wasn't suspected. Then out of the blue I felt the urge to get out. I had just gone to bed when the hunch came. It was so strong that I didn't stop to question it. I got quietly out of bed and packed my few things and sneaked out the window and down the fire escape ladder outside the window. Before I reached the street flames shot out of the window I had just left. Before I had gone a block the whole building was in flames."

"I KNOW how that works," Mary said. "A strange impinges on your subconscious. Your conscious mind isn't aware of it, but you are used to thinking in your subconscious most of the time anyway. It comes out as an unexplainable hunch."

"Perhaps so," Steve said. "That wouldn't explain the time I slept *under* my bed, for no reason at all, in Paris,

and woke up at three in the morning when a bullet plowed into the dummy I had placed there, made of an overcoat and a wadded up pillow."

Mary started to laugh.

"What are you laughing at?" Steve said.

"I can just see you in that bedroom," Mary said. "I can see you looking at the soft bed, shrugging your shoulders, and then resignedly crawling under the bed and going to sleep there."

Steve grinned. "You must have been peeking," he said.

Mary became serious again.

"So I'm a hunch of yours," she said gravely.

"Mmm hmm," he hummed, sounding quite sure of it.

"Are you sure it isn't—something else?" Mary asked.

"Of course not," Steve said gruffly. "I know when I'm outclassed."

Mary looked at him queerly.

"You know," she said, surprised and pleased at the same time. "You're just like my father. By the way, since you're telling me everything; just what were you doing chasing those men in that car yesterday?"

Steve seemed not to notice the sudden switch.

"They were perhaps the first positive lead we've had so far," he said. "Of course we've had a net out for suspicious people who buy things at scientific houses. Three days ago those two bought two pounds of raw silver from an assayer. We put a watch on the hotel where they were staying. Yesterday they checked out. I was on duty watching them. I followed them. You know the rest."

Mary looked puzzled.

"Why should they buy raw silver and run a risk when they can get silver out of any dollar, or dime for that

matter?" she asked.

"Coin silver isn't pure," Steve explained. "It has other metals in it that would probably interfere when they reduced the silver to a paint."

"Oh," Mary said, but she seemed on the point of disagreeing about Steve's reasoning.

"Would you like to join forces with me?" Steve asked eagerly.

"What could I do?" Mary asked.

"You could give me the telephone numbers where I could reach you at any time of the day or night," Steve began. "And we could get together and talk things over—frankly, Mary, you couldn't help me much because I wouldn't put you in danger for anything. That is, you couldn't be of much help if there were any danger. You could give me a little moral support, though, and sometimes, like yesterday, if I could get in touch with you in a hurry you could be of invaluable assistance."

"I see." Mary toyed with her napkin, her lips struggling to hide a smile.

"Well," Steve went on helplessly, "maybe you want to think about it. Could I call you later?"

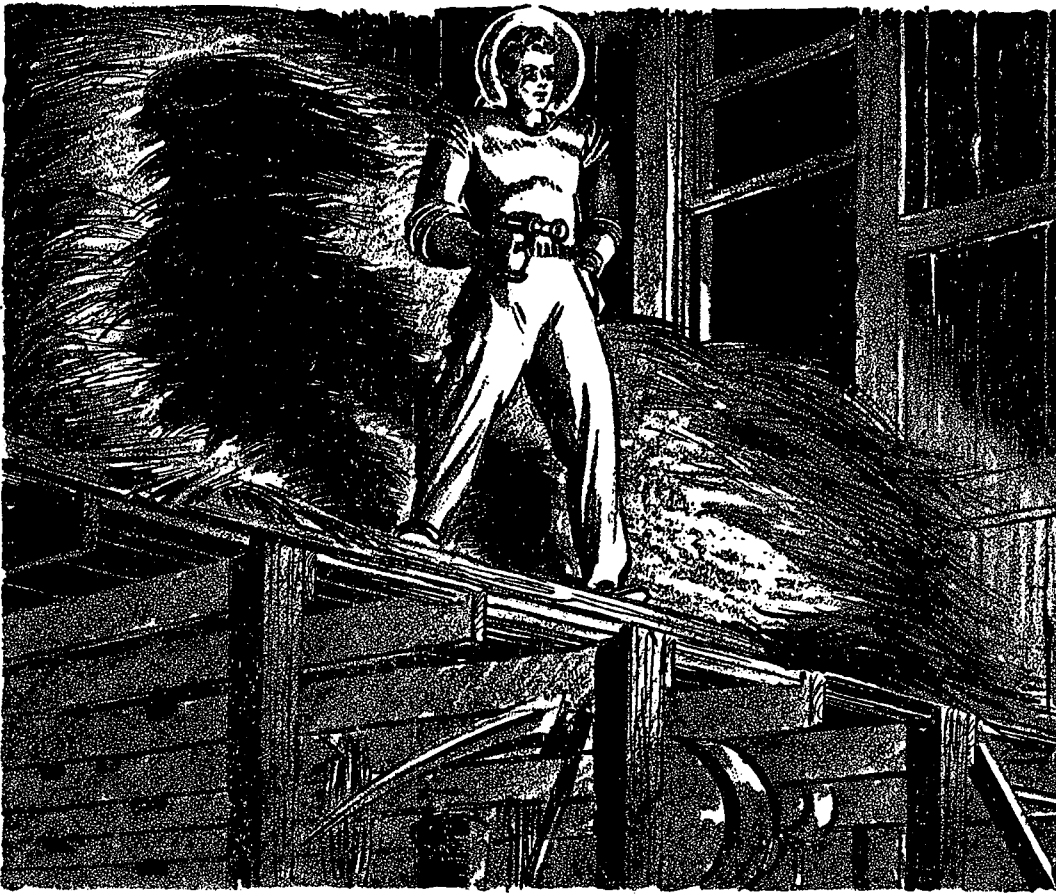
"I don't need to think about it," Mary said.

"Oh," Steve said regretfully. "Oh."

"I would like to help you," Mary finished.

"You would?" Steve asked. "Gee! That's swell! Could we get together this evening and get things organized?" He glanced worriedly at his wristwatch. "I have to meet a guy in ten minutes, so I haven't time now."

"Okay," Mary said, smiling. She rose and Steve jumped around the table to help her with her wrap. As they walked toward the exit he took her arm possessively and she didn't seem to mind.



DR. WELMER looked up from his desk as Steve entered the room.

"Did you succeed?" he asked sharply.

"Yes," said Steve. "But I think you're wrong."

"What makes you think so now?" Dr. Welmer asked in surprise. "You were convinced enough before you had lunch with her."

"I know," Steve said. "But damnit, she couldn't be that kind. I know a little about character. She's pure wool and—she has a swell figure, too." He grinned. "Almost made a slip there, doc. But the main reason I changed my mind is that she pointed out the very thing that made us sure it was a plant."

"You mean she pointed out that they could use coin silver instead of running the risk involved in getting pure silver?"

"Right," Steve said, sitting down on the edge of a chair.

"Well," Dr. Welmer said slowly. "If she isn't a plant we have nothing to lose, and if she is we have our one and only contact with whoever is running this thing we are fighting. That's more than we had before."

"I played my part," Steve said. "If she is a plant she now has the impression that I know more than I said, and that we have definite leads but aren't talking about them. I was careful to convey the idea that we had absolutely nothing, but in such a way



that it was extremely probable we have a lot."

"Did you also convey the impression that you had fallen for her?" Dr. Welmer asked.

"That wasn't hard," Steve said evenly. "I have."

He turned his back on Dr. Welmer and went to the window. The doctor looked pityingly at his back, shook his head regretfully, and then went back to his papers.

Finally, without looking up from his work, he said, "I hope for your sake you're right. It is too seldom that a man in your work finds a girl worth having. It is always a tragedy when the one he falls in love with is on the side of the enemy. I hope it won't

color your judgment and bring about disaster."

ED. TURNER'S column hit the public right between the eyes on Thursday morning, just three weeks after Steve's luncheon date with Mary. It went like this:

This will probably be the last column I'll ever get to write. You'll see why when you get through reading it. In the past ten years I've tried to live up to my initials and be the D.D.T. that brings the crooks in high places, the vermin in our government and unions, and all other insects that prey on the public gaze, where the sunlight kills public, right out into the light of

them quickly.

I've had a pretty good batting average, too, in those ten years. I've earned a good living at it, but the money wasn't my chief motive. Neither was fame as a columnist. My chief motive was to help preserve the American way of life right here in America. Now it seems those ten years will have come to nothing before another year has passed. Why? Because there will not be a presidential election this year, for the first time in the history of our country!

How do I know? I have before me on my desk as I write this column a photostat copy of the master plan of the present administration for the coming year. On it is an outline of the events that will be MANEUVERED to create a situation, and a list of the key men who will do the maneuvering.

There is not space enough in this column to give the whole thing, and I am quite sure that I will not be given the opportunity to give what I have to leave out in future columns. Quite frankly, I don't think I will be alive to write more columns after this one reaches the public.

So here is the bare outline of what is coming. First on the list is a general strike of all workers scheduled for the first part of August. If you are a union man perhaps you know that your union is discussing that strike right now, on the basis of its being a demonstration of power, to last only twenty-four hours. What you DON'T know is that in that twenty-four hours the government is to declare a national emergency and martial law. ORDER the unions to call off the strike at once, and then not give them time to do it. The unions are

being DUPED into calling the strike. DUPED by the administration, and they won't discover they were duped until it is too late.

Second, already the machinery of Fascist mechanics has been set up and is in operation. The most important cog in that machinery is the so-called loyalty investigation that has been in operation for some time. Designed to rid the government of undesirables, it has rid the government of all men who will not play along with a dictatorship putsch.

Thirdly, in key sections of the country hired underlings of the self-styled coming dictator (you know who I mean), are ready to start local revolts and riots, so that the administration can point to those outbreaks as just cause for continuing the state of national martial law indefinitely.

Finally, and this is the thing all the rest will lead up to, at the last moment literally thousands of local voting officials will be framed with phony evidence to prove they were going to substitute fake ballots. The ballots, already made out and in boxes just like the ones the real ballots would be in, will be 'seized' in raids. Voting machines will be "seized" that are fixed so that the pressing of a "secret" button will change the final count to a predetermined setting.

Then the government, already running the country under martial law, will issue a declaration to the effect that until such time as it can be guaranteed that the balloting will represent the true will of the people THERE WILL BE NO ELECTION.

The government will deny this. They will undoubtedly force me to

state publicly that I didn't even write this column, but that it must have been substituted for my regular column by some undiscovered fifth column group. Your local newspaper in which this appears will probably make a lot of excitement with stories about mysterious substitutions of type after the galleys have been okayed by their editor. They will HAVE to try to cover up, or the government will CLOSE them up. DON'T LET IT FOOL YOU.

That's all, brother. Nice to have known you, we who salute you, and all that rot.

TURNER'S column carried that bit of dynamite in fifteen home editions before it was discovered. Nearly fifteen million people got to read it before the papers were pulled off the stands and prowler cars tracked down newsboys on their routes and took their papers away from them.

Efforts to undo the damage only added to it. Joe Doaks on South Central Street didn't get his evening paper. At work the next day John Doe, who did get a paper told him why he didn't get it.

Editor Smith published a sworn affidavit on the front page of his paper that he read the proofs of Turner's column and they were nothing like that. It must have been substituted just as the okay for starting the presses was sent down.

But that is what Turner SAID he would have to do or close shop.

The real clincher came when reporters tried to get hold of Turner so that he could deny the whole thing publicly. He couldn't be found at first. Then his body with twenty-three machine gun bullets in it was found in an alley in Washington. No one heard the shots.

The government was forced into the position of the man who is asked if he still beats his wife. It could say the column was true, which would be a lie—or it could try to prove it wasn't true, which would only add to the evidence against the administration and cast doubt on the freedom of the press.

The fact that in each paper the column appeared, the column had been slipped in just as the okay was given to start the presses, seemed a little too improbable.

The next forty-eight hours saw some fast developments. The unions admitted that they had been discussing the possibilities of a nation-wide demonstration strike, but that now all such plans would be dropped, and that no union could hold a strike before the election date in November on penalty of expulsion.

The President tendered his resignation to both houses, to take effect on the expiration of his term in office and withdrew his name from the ballots.

Congress held all night sessions trying to substitute something for the loyalty courts, but got nowhere, although hundreds of schemes to accomplish the same effects in different words were considered. Finally the President sent a note to congress suggesting they abolish the practice.

The unions and the administration leaned backward so far in an effort to convince the public the column had been nothing but lies that they were flat on their backs.

The public and the administration were both as jittery as a horse's nest with termites. All that was needed to start the great American Revolution, as one columnist with a sense of humor put it, was for someone to stand on forty-second and Broadway at high noon and yell boo.

Few people saw anything funny in

that remark because it was too close to the truth. Far-sighted politicians who saw the handwriting on the wall quietly slipped onto the give-the-government - back - to - the - people band wagon and started turning up their fish horns. In the still hours of the night political carpenters were called in to replace old planks with brand new ones on party platforms, and senators stayed up all night culling their old speeches for quotes to prove that the new planks were actually the ones they had ridden to victory on all during their careers.

ON THE Saturday night after this big explosion, Steve took Mary to the Club Cubana to dance to the music of Phil Brodey and his orchestra. Neither of them had spoken of the event, by common consent.

More than once Steve caught himself looking into Mary's eyes, wondering how it could be possible that she was a tool of the hypothetical, alien creature which all evidence pointed to as the mastermind behind events.

But now the waiter was laying out their dinner and when the dance was finished they would relax and enjoy their meal while Steve carefully discussed the events of the week in exactly the way his superiors had ordered him to do.

The music stopped. Steve dropped his arm from Mary's waist reluctantly, and she hooked her arm in his as they walked across the floor to their table.

He stood back of her chair while she sat down, and after helping her slide the chair close to the table he bent forward and kissed the crook of her neck.

She shivered ecstatically, and Steve walked around the table to his place feeling like Judas. They ate in silence for several minutes, then Mary herself

opened up the subject:

"Steve," she said seriously. "I've been thinking. This column of Turner's that stirred up such a fuss sounds very much like that other thing you mentioned—the changed note to the Russian Government. What do you think?"

"You're right," Steve said, sighing with relief at the way she had started things. "Not only does it seem done by the same hand, we have positive evidence. In a way we got it by pure luck. But sooner or later luck always runs against the criminal mind. The law can make mistake after mistake, so long as it gets the right answer in the end. The criminal can't afford to make even one mistake. That's why law and order always wins in the end."

"Then you finally have a definite lead?" Mary asked eagerly.

Steve nodded. "It's just one of those things. A grease monkey on the printing press of one of the newspapers that ran that column saw the man who changed the plate. He didn't think anything of it. As a matter of fact he signaled to the operator to hold up starting for the fellow. Yesterday he remembered about it and called on the F.B.I. That was the right thing for him to do, because even the publishers aren't free of suspicion on this!"

"Have you arrested the man who did it?" Mary asked.

"OF COURSE not," Steve said.

"We have him covered, though. We have a net around him so tight he couldn't fall over without knocking down six of our best operatives. Right now he's at work at the newspaper plant, but up in his room some of the country's best scientists are going over everything he owns with all kinds

of probes. I think you can understand that we're deathly afraid. We're up against something so subtle-and so devilish that we may not win. We know that a button on a shirt may be anything from an atom bomb to a high powered broadcasting set; that a strain on a tie might be some new weapon we have never dreamed of in our science. The scientists that go into that room carry pocket geiger counters, all-wave directional radio detectors, X-ray machines, delicate instruments, and cameras.

"They wear gloves and face masks, carry oxygen tanks and canaries in cages, and there are truckloads of gadgets waiting out in the street in case they are needed. Also fire trucks surround the block, and dozens of police cars lie in waiting over every route to and from the rooming house where the man lives. We don't expect to find a thing, mind you; but we dare not overlook a single bet. We are hoping that sooner or later he will contact someone who will contact someone else, who will lead us to the headquarters of this master schemer."

"You are thorough, aren't you?" Mary exclaimed.

A waiter approached the table.

"You're Mr. Kaiser?" he asked. Then, at Steve's nod, "You're wanted on the phone sir. This way."

Steve excused himself and followed the waiter. It was Dr. Welmer who was on the wire.

"Listen, Steve," he said hurriedly after Steve had answered. "We're all set. Go back and tell her the man has started out into the country and that you must follow him. Tell her it's out highway forty-nine. Invite her to go along. When you catch up with a car with license 354-865, pass it and pass the next two cars also, then slow down to the same speed as the car

ahead of you. Got that?"

"Yes," Steve said tonelessly. He hung up and went back to the table.

Mary looked at him with an expectant light in her eyes.

Steve's held a grim look as he answered her unspoken question. He said in his own words what Dr. Welmer had told him to say.

Mary jumped at the chance to go with him. Steve left a bill on the table to pay for their evening's fun, and they hastily left.

Steve's car was at the curb in front of the club, motor running. Teamwork. Mary would assume Steve had ordered it there himself, which he should have.

Steve climbed in behind the wheel while the doorman took care of Mary. He kicked in the siren and shot up to sixty, his eyes straight ahead.

Highway forty-nine went north. In ten minutes after leaving the club they reached the city limits and open highway. Steve cut off the siren and pressed his foot down on the gas.

Steve was too busy looking at the license plates of the cars they passed to think of anything else. Mary sat in silence.

On a clear stretch Steve stole a glance at Mary. Her face looked eerie in the light from the dashboard. Her eyes were straight ahead her features grotesquely highlighted by the instrument lights. She seemed tense and expectant, almost worried.

FINALLY license 354-865 flashed momentarily ahead. Steve took his foot off the throttle as he passed it. Cars were strung out ahead, about a block apart. He coasted past two more cars and then cut over. He was behind the car he was supposed to follow now, and things worked perfectly. A long string of cars were coming from the

other direction so that he could not have swung out and passed it if he wanted to.

It was another five minutes before Mary realized they were actually behind the car they had come so fast to catch up with. She didn't realize it until traffic from the other direction had stopped and Steve showed no signs of going faster.

The car was a prewar Chevrolet. In it, so far as Steve could make out, was only the driver—a man. It went along at a steady forty miles per hour, mile after mile.

The procession passed through two towns before the Chevrolet turned off the highway onto a side road. Steve, knowing the layout of the roads in this part of the country, speeded up and took the next side road which ran parallel with the one the Chevrolet had taken.

He could see its headlights off to the right as it went through the night. Finally it turned toward them and stopped. Its lights went out, leaving the stars in almost undisputed control of the night sky.

Steve pulled to the side of the road, shutting off his lights. The other three cars which had followed him did likewise.

Steve and Mary climbed out. They were joined by a dozen muffled figures. Introductions were made quietly.

Dr. Welmer took charge.

"We can cut across the field here," he said. "It's only a half a mile. Watch out for barbed wire, though."

Steve took Mary's hand. Her high heeled slippers were giving her trouble in the soft dirt. When they came to fences he lifted her over. At the second fence he kissed her as she lay in his arms just before he lifted her over the fence.

He could hear her breath quicken as

he kissed her, but otherwise she gave no sign of reaction.

A mass of farm buildings loomed larger and larger ahead. Everything was in darkness except for a small line of light from a curtained window in the farmhouse.

Dr. Welmer led the way toward the largest building which was obviously a barn. The group clung close to it as Dr. Welmer led the way around it. He stopped and fumbled at something, then an almost inaudible creak could be heard as a dark rectangle opened up.

Quietly the group slipped inside. When they were all inside he closed the door slowly. The click of the latch hit the silence with explosive force.

"I'm going to turn on my flashlight," Dr. Welmer whispered. The cone of light split the intense blackness to reveal the normal interior of a barn—stalls, feed troughs, cattle, a tractor, and other equipment.

The light went out after it had been on several seconds.

"Nothing in here," Dr. Welmer said.

WHEN the flashlights had gone on, revealing the interior of the barn, Steve had had his hand on Mary's arm. He felt a sudden tensing of her arm, and heard an almost inaudible gasp of surprise escape her lips.

Now, with the flashlight shut off and darkness once more cloaking everything, he felt her begin to tremble.

Suddenly she bent close to him, her face close to his ear and the faint aroma of her perfume in his nostrils.

"Steve," she whispered. "We've got to get out of here. Please. There's danger. Horrible danger. I feel it."

She had tried to keep her voice so low that no one but Steve could hear her, but in the almost absolute silence her voice was like the rasping croak

of a loudspeaker, for all to hear.

"What makes you think so?" Dr. Welmer asked. There was a faint mocking tone in his voice.

"I don't think so," Mary said, terror clutching at her vocal chords. "I know it. You don't know what you're getting into! Please. Let's go. Let's get away from here while we can."

"I'm afraid it's too late already," a strange voice came out of the darkness. "No, gentlemen. Leave your guns where they are. There are infra red rays here which make you as visible to me as if it were broad daylight. I will shoot the first man who moves for his gun."

The voice was thin, almost childish. Yet it contained the calm assurance of a man who holds all the trumps. The boyish chuckle that followed it might have been made by a twelve-year-old boy who has just won a marble from his playmate.

"It's too bad, Mary," the voice went on, "That your emotions got the better of your judgment. It means that you will no longer be useful to me. I will have to punish you for destroying the value of this place. You know how much work has gone into it." The childish voice was mildly rebuking.

Mary began to sob quietly. Steve put his arm around her shoulder and glared defiantly at the darkness.

A light sprang into existence and darted about the barn. Dr. Welmer had turned on his flashlight, hoping to reveal the source of the voice.

A shot sounded from overhead. The flash of the gun lasted for a brief fraction of a second, but in that second a figure was revealed, standing at the edge of the hay loft, looking down at them. That figure stayed implanted in the vision of those below for several seconds after darkness returned. It photographed itself indelibly on

Steve's memory so that for the rest of his life he could recall it in its every vivid detail.

It was the figure of an overgrown, hydrocephalic boy of not more than ten years of age. His bulbous head dwarfed a small, sharply featured face with a straight white wedge of a nose, thin straight lips, and pointed chin. The shoulders were narrow, the hips wide, and the legs noticeably knock-kneed. The eyes were large and dark, seeming to be painted on the face, so flat they were. The general incompetence and immaturity of the body were more than offset by the light of intelligence and other-world superiority in the large, flat eyes. Steve was left with the conviction that the bulbous head was not hydrocephalic, but the seat of a mind which, though childish and undeveloped, according to the standards of the race this child came from, was more than a match for the entire human race.

MARY'S shoulders trembled under his protective arm. He dropped his arm to her waist and drew her close to him, glaring defiantly in the direction of the figure that the gun flash had revealed.

Dr. Welmer now spoke up.

"What does the nasty little boy intend to do now?" he asked evenly. "Are you so infantile and irresponsible that you will kill all of us? If you do I'm sure your mama will spank you when she finds you."

"Please," Mary pleaded. "Don't make him angry. He is just a child, but his race is so far ahead of us that even though a child he has powers and intellectual development that are greater than any of us could possibly attain. If you anger him he will kill us—just as you might kill a fly or a mouse. That's all we really are to

him."

"All right," Dr. Welmer said soothingly. "He has a gun and can see in the dark. We don't stand a chance. Either he is going to kill us or he isn't. I'd suggest we all make a dash for the door. Maybe some of us can get away. Okay?"

Instantly there was the sound of movement as everyone moved quickly to escape.

Steve took Mary's hand and started to move with the rest. She held him still. Together they waited for the expected shots. None came. When the last of the men had left the barn Mary followed slowly, leading Steve.

They stepped through the door in time to hear Dr. Welmer order one of the men to run to the cars and radio for reinforcements to surround the farm and search it.

"It's too late for that," Mary said sadly. "He's already gone. You'll never find him."

And they didn't. When daylight came there were fifty state patrol cars around the farm, and uniformed men swarming everywhere. They found the tube that led from the hayloft straight down below the barn where it opened out on a series of radiating tubes that led in every direction. They found a work-shop in the hayloft and promptly sent for their staff of experts to go to work on it.

They found the place where the strange child had taken a car and made his escape. A dragnet was immediately laid all over the state, but no one felt that it would uncover him.

IT WAS midafternoon on Sunday before the activity of the search died down and Dr. Welmer, Steve, and the others on special detail gathered in the farmhouse.

Mrs. Johnson had cooked a dinner

that only a farmer's wife knows how to prepare. She and her husband, and Mary, too, ran around the house as though lost. They were like parents trying to propitiate the city fathers when their small son has burned down the city hall so that the pretty red fire trucks will come out and go clang clang and squirt water all over everything. It was quite obvious that they had no real conception of the enormity of the situation, and it was also quite obvious that their minds could not quite accept the serious facts.

After they had all settled around the groaning table and dipped their spoons in the bowls of rich soup, Dr. Welmer said, "Suppose you go back to the beginning and tell us all about this monstrosity from space."

Mrs. Johnson started to talk. Sam Johnson interrupted her and said, "I'll do the talking. You always get things mixed up." Then he fastened his attention on Dr. Welmer.

"It all began two years ago, during the heavy snow storm. I had gone down to the south pasture to make sure my stock was comfortable and out of the storm. When I was gone Cliff—that's what we call the little fellow—dropped out of the sky in a parachute and saw the lights in the house.

"He didn't know whether we would be friendly or not, so he used a paralysis gun on Jenny and my two daughters. When I got back he used it on me. He was afraid of us. I didn't blame him much. I'm afraid of a monkey, and if one came in the window right now I would probably not stop to find out if it were tame or not.

"Anyway, when the paralysis wore off enough so we could talk to him he started right in on English. It didn't take him more than a couple of hours to master it enough to get information

out of us.

"He stayed in his space suit the first few days, so we didn't get a good look at him. I guess we thought the little we could see of his face was distorted by the glass. It wasn't until after he stepped out of his suit that we realized he was just a little boy that had gotten lost."

"And what a little boy!" Steve murmured to himself.

"You said it, mister," Sam Johnson echoed. "He showed us enough of the things he could do to make us hesitate about calling in the authorities. He has a bunch of spiders that I think are intelligent. They live in his clothes like fleas live on a dog. At his request I brought a chicken in and turned it loose in the kitchen. He sicced his spiders on it, and they killed it. We got the idea.

"The storm kept us for two weeks after he arrived. During that two weeks he became satisfied that we were too afraid of what he could do to turn him in. After that he got a little friendly. I think he was homesick. Anyway, little by little, he told us all about himself.

"It seems his father and mother and a lot of other of his people were cruising around the Earth on a sight-seeing trip. He's from Venus. The people from Venus come here quite often, but never land. They just cruise around and look at things, then go back to Venus.

"Well, Cliff got a bee in his bonnet that he wanted a little adventure, so he put on his space suit and slipped overboard when no one was looking. He brought his pet spiders with him and a lot of toy gadgets."

"How old is he?" Dr. Welmer interrupted.

"WELL, now," Sam Johnson said slowly. "I don't know for sure. His age is equivalent to about eight years and may be eight years, for all I know. But we've known him for almost two years now, and he hasn't aged as fast as a normal youngster. I'd say he's aged very little at all. Judging from what I've seen I would say that it probably takes forty or fifty years for a Venusian kid to grow up, and that Cliff is more nearly twenty than eight.

"Anyway, he behaved himself and we felt sorry for him. He let the girls go back to school after they promised they would keep the secret. In the spring he watched me do the planting, and then came up with some stuff that made my crops mature way ahead of time. He slipped some stuff in the drinking troughs for the livestock, too, that made them gain weight fast, so that I got quite a bit of extra money for them over what I usually do.

"We got used to his appearance, and when the girls came home for vacation it wasn't long until he was just part of the family.

"He was always making something. One day he rigged up a box with peep holes in it and a comfortable seat inside. After that every time I went to town he rode along and watched things from that box where people couldn't see him.

"He read all the papers and magazines we had around the house, and then wanted more. Before the summer was over I had made so much extra money on account of the things he did that I decided it wouldn't do any harm to give in and get everything he wanted.

"Mary had graduated from college that spring, and when Martha went back to school Cliff asked Mary what she wanted to do. She said she would

like to go into business for herself. Cliff seemed interested in that, so one day Mary took the sedan and drove into the city with Cliff all bundled up so that unless you stopped and looked at him close you wouldn't see anything wrong with him.

"Well, a couple of weeks later a man called and said Mary's store was already for her to move into. It seems that Cliff had been writing a few letters here and there that made people do things, for some reason. I never did figure out how he did it. He said it was the power of suggestion, but it seems to me it would take more than the power of suggestion to make a hard headed banker go ahead and cancel a lease on a choice store location and do it over the tune of several thousand dollars without bothering to see who he was doing it for, or get their signature on a note or something. That was what happened, though.

"Right after that Cliff bought a lot of scientific stuff and set up a laboratory in the hay loft. I went up one day when I didn't have anything else to do and watched him. All he did was draw lines on paper with some silver paint he had mixed up. It was always something senseless like that, but when it was done it worked miracles. He took an old book off the book shelf in the front room and drew some lines on the pages. After that all you had to do was open the book at a page with the right station marked at the top and you got that radio station so you could hear it all over the house. We didn't need the radio any more after that, so he made a dingus out of it and put it on wheels. He had a lot of fun with it digging tunnels all over the place. It sent out some kind of a force that would push all the dirt out of the way, even heavy boulders, and melt some of it so that there was

a hard lining to his tunnels.

"He got interested in writing letters about that time. It got so the mailman was delivering a dozen or so letters every day addressed to Cliff Johnson—that's what he called himself. We had no idea what was going on until today. I was too busy with my farm work to read any of his letters or talk to him much about them. Jenny was too busy with the housework, Martha was in school, and Mary was in the city running her bookstore, which was making her a lot of money.

"Sometimes Cliff would take a few sandwiches and disappear for a day or two. We always supposed he was just playing some game by himself down in the tunnels. We knew he was ten times as smart as any ordinary human, and we knew he came from a race that is probably a lot smarter than we'll ever be as a race. But we had no idea the government had organized a whole branch of secret service to look for him, or that he had killed anybody, or kidnaped anybody."

Sam Johnson paused apologetically. Then he concluded, "I hope you don't hold any of us to blame. If he ever comes back here we'll certainly let you know unless he keeps us from it."

DR. WELMER looked thoughtfully across the table at Mary.

"Did you know?" he asked.

"I had begun to suspect it might be Cliff," Mary said. "I didn't see how it could be, and yet I didn't see how it could be anyone else. I almost told Steve about him last night at the Club Cubana. Maybe I would have before the evening was over."

"You didn't know that Steve's meeting you was maneuvered by Cliff? That those thugs wrecked Steve's car right after it passed you so that you

and Steve would get together?" Dr. Welmar's voice carried a faint note of incredulity.

Mary reddened at the implications of his tone.

"No, I didn't," she said. A light of sudden comprehension dawned in her eyes. "I think I understand why Cliff did that, though."

She reached inside her dress and pulled out a locket fastened around her neck with a fine gold chain. Then she handed it to Steve.

"Cliff made this for me," she explained. "I think now it must contain some kind of listening device so that he could hear everything said near me."

Dr. Welmer nodded his head.

"That makes sense," he said. "This Cliff didn't need to let you know anything. Somehow he knows every intricate detail of human behavior and and plays on it like ordinary kids do with tinker toy sets. I'm beginning to see a little of his slant on things. He's just a kid raising hell for the fun of it, and not too careful about how much harm he does because to him were just a bunch of subhuman monkeys. He probably thought it was fun to try to create a revolution in the United States. He was probably disappointed when Russia didn't start a war with us a few months ago."

Everyone was silent, digesting the implications of all this. Dr. Welmer broke the silence.

"I wonder where he went, and where those scientists are that he kidnaped. I wonder how many thugs he has working for him. I wonder what he'll do next?"

"While we're wondering," Mary said thoughtfully, "I wonder if you haven't underestimated Cliff a little?"

"How do you mean?" Dr. Welmer asked.

"You assume that he really intended that Russia fight us. You assume that he really intended us to have a revolution. I know that he absorbed all the details of human history. I personally brought him home scads of history books covering the whole period of history. I know him. Suppose he saw implications of current events that the rest of us couldn't see? Suppose he knew that Russia would withdraw her troops from Korea. Suppose he knew that when that column hit the streets the administration would have to turn about face. Suppose he saw war with Russia coming, and figured out just the psychological solution to the situation to forestall it. Suppose he saw that the administration was actually planning a coup to form a dictatorship? Suppose those scientists he had killed were up to something? Suppose that right now Cliff has the other scientists working on something that will prove of real benefit to mankind? I know him well enough to know he is sensible, even though he is only a child. I don't think he would kill anyone just for an idle prank. I may be wrong, I know. He did things under our noses that we never would have dreamed possible. But is he malicious? Does he consider us monkeys to amuse him? Somehow I can't believe that."

"YOU'RE stretching a few points to make a case," Dr. Welmer said dryly, "but I must admit that by some far-fetched chance you may be right. The point is, we can't have a kid like that wandering around loose. Our whole foreign policy is up in the air on account of him. Our government is in a position where it has to apologize for breathing. Our unions are afraid to call a strike over a just grievance. Frankly," and Dr. Welmer laughed

nervously, "I wish he'd go home and behave himself. If he doesn't, and we can't catch him there's no telling what will happen."

"Dr. Welmer," Mary asked. "What became of that man we were following last night?"

"Oh, him," Dr. Welmer said.

Steve, sitting beside Mary, chuckled.

"You tell her," Dr. Welmer said.

Mary looked at Steve curiously. Steve blushed in embarrassment.

"He was just one of our men. Dr. Welmer was convinced you were a Mata Hari, a tool of this alien creature, set to spy on us and report back to Fu Manchu, the sinister Master. So he set a trap to make you give yourself away. You did, too, you know. Our man just drove out to your father's place after we had located it. When he got in front of it he turned into the driveway, shut off his lights, backed out, and went back the way he had come. It was a long shot in the dark, and if you hadn't gotten nervous and given Cliff away back there in the barn we would have had to go away without uncovering anything."

"I couldn't help myself," Mary confessed. "I didn't pay any attention to where we were going, so when Dr. Welmer flashed his light on out in the barn and I suddenly realized it was our barn, and that in all probability Cliff was asleep up in the hayloft where he practically lived every hour of the day, I was afraid he would turn his paralysis ray on you, and maybe some of you would shoot him."

She smiled tremulously and Steve took her hand under the table and squeezed it reassuringly.

"What do we do next, doctor?" Steve asked.

"I don't know," Dr. Welmer said with a frown. "We'll probably just

have to wait for his next move unless something happens to give us a break. I only hope his next move isn't as dangerous as his last was. Meanwhile we'll go on with routine, trying to follow his movement from here, keeping an eye on the place, and hoping that nothing happens that we can't handle. So long as that brat is loose we will never know from one day to the next what devilment he is going to cook up. It may come tomorrow. It may not come for a week, a month, or a year. But sooner or later he will cut loose with another of his schemes. Then we may find out whether he is a Sir Galahad as you think, Miss Johnson—or a sinister super-kid who classes us lower than his pet spiders, as I think myself."

Dr. Welmer's hand had gone inside his coat as he talked. Now it came out in a quick movement that ended with a burst of flame and sound.

The bullet crashed through the plaster in one corner of the room near the ceiling. Dr. Welmer got up from the table, his gun ready to fire again. He walked over and looked down at the small heap of plaster that had fallen. A small black ball lay in the white dust.

Dr. Welmer took out his pen knife and stuck the blade carefully into the object, picking it up. He held it toward Sam Johnson.

"Is this one of his spiders?" he asked.

Sam looked at it.

"Oh no," he said. "Cliff's spiders aren't black. They're a little larger than this and a golden brown in color."

"Dr. Welmer snorted his disappointment.

"I wish we could find that kid," he said worriedly. "Until we do I'm going to feel like spiders are crawling all over me."

He looked angrily at the gaping hole in the plaster until his features relaxed.

"I'm awfully sorry about that, Mrs. Johnson, and I want to thank you for the wonderful dinner. I haven't had anything like that since I was a farm kid myself. It hit the spot."

"That's quite all right," Mrs. Johnson said. "Sam can fix that hole all right, can't you Sam."

SENATOR SQUEEMS' dynamic lips stopped moving and the golden words of oratory stopped flowing from them. His hand reached into his breast pocket and extracted a spotless two-dollar handkerchief with which he wiped his high, intellectual brow while the densely packed sea of faces in the hall shouted their approval of what he had said, and their invisible hands clapped loudly, the thousands of individual hand-slaps blending into a low roaring sound that was music to the senator's ears.

He smiled his thanks, stepped back from his position on the front of the platform, and half turned, ready to take his seat. The applause was still a deafening roar. It would have been almost impossible for any other sound to be heard at that moment—almost impossible, but not completely so, because above that deafening roar another sound was heard.

It was a voice. The voice came from nowhere and yet from everywhere. It came from the walls, the ceiling, and the floor. It even spoke from the sidewalks around the building. Its source was an incredibly powerful magnet in the basement of the building, so placed against one wall that it became the magnet of a dynamic loud speaker whose diaphragm was one of the supporting girders in the wall of the building.

The voice didn't say much. It be-

gan and ended while Senator Squeems was holding his breath. It began with just the words, "Senator Squeems!" uttered in an imperious, dominating tone that brought the applause to a hasty termination and left the audience frozen.

Senator Squeems paused and looked out over the audience, puzzled. He couldn't quite see where the voice might have come from. Then it began again.

"Isn't it true," the voice said in faintly mocking tones, "that you have accepted over three million dollars in secret campaign contributions from various sources, and that these contributions are now salted away to the tune of one million dollars in twenty- and fifty-dollar bills in a box in the New York Trust, the same in the box you have in the Oklahoma City First National, and sums of a hundred thousand in various other safety deposit boxes you have rented along the path of your campaign trip, including box sixty-four in the First National Bank in this city, which you rented at three fifteen this afternoon for the purpose; and that brief case lying on your chair contains over half a million in currency which you plan to cache in a similar manner before your trip through the country is finished?"

An enterprising press photographer snapped a picture of Senator Squeems' expression just seven and three-tenths second after the voice stopped. His co-worker, the reporter, had taken down what the voice said.

The photographer slipped the film from his camera and put it in a secret pocket in the lining of his topcoat. The reporter hastily memorized what he had written, then folded the slip of paper it was written on and put it under the lining in his hat. They were too experienced to take chances.

GOVERNOR BREED was turning into the home stretch in his speech, being broadcast over all networks to the nation, in his campaign for the presidency of the United States. While he read his carefully rehearsed speech into the microphone he was thinking what an easy time he would have of it now that Senator Squeems had been eliminated from the race for office.

The other party would have to scrape up another candidate now, and there just wasn't any prospective presidential material left in their ranks.

Breed looked every inch a president as he stood, bent slightly forward, his hand holding the microphone stand steadily. His iron grey hair was combed back in a semi-pompador that set off his high forehead to good advantage. His finely-chiseled nose, strong mouth, and determined chin were those of a born statesman.

Every voter in the country and even people who couldn't vote because they hadn't registered were listening to him.

Then, into the soundproof room, resting on its vibration proof cushions so that no external sound could penetrate, lined with double-spaced plate glass so efficient that a person shouting outside could not be heard though it, came the voice.

"Governor Breed!" it said firmly.

Those just outside the room who were watching the Governor and listening to his speech through a cabinet radio saw him turn pale as the voice sounded.

When it sounded, the Governor's voice in the microphone had dropped to almost inaudible volume due to a little device on the broadcasting panel which regulates the volume of sound.

Consequently a hundred million or so people heard it, as well as the Governor. It sounded again after a

dramatic pause of four and three-fifths seconds.

"Isn't it true," the voice went on, "that just four weeks ago you shot and killed a woman in St. Louis because you are the father of her illegitimate child and because she has been blackmailing you ever since you became governor and had threatened to expose you; that the gun you used is at this very moment reposing in a holster under your left arm against your ribs, and that the rifling marks on the bullet extracted from the chest of this woman, Mary Topalitsch, which is now in the hands of the St. Louis police department would check with a bullet fired from that gun you are wearing?"

An enterprising press photographer caught Governor Breed with his right arm unconsciously resting over the concealed gun and an expression of defeat on his mobile face.

The photographer took another picture of the Governor, the loose sheets containing his speech scattered at his feet where they had fallen, his head bowed in dejection.

The two pictures appeared side by side in most of the country's newspapers within a few hours.

"THAT does it," Dr. Welmer said, tossing the paper to one side on his desk.

"Does what?" Steve Kaiser said. "One of the presidential candidates was preparing for a rainy day and promising anything for a campaign contribution. The other did a little murder to cover a mistake he had made in a weak moment. The president himself has been practically convicted in the public mind of planning to become a dictator, and is out of the election picture. Now what will happen?"

"You know this is Cliff's work,"

Dr. Welmer said. "Do you want to know what happens next? I'll tell you. It's going to be impossible to find anybody willing to run for the office.

Steve looked startled. "You mean that every big political figure has some deep secret that he is afraid that mysterious voice would expose?"

Dr. Welmer nodded grimly.

"They aren't all outright thieves or murderers," he said. "But there are so many ways they could be smirched. Those that are okay feel that unless they received the okay of this voice, they might be framed with something. Everybody's beginning to wonder if there will be an election at all. If there isn't, then the Secretary of State will get the office."

Mary Johnson spoke up. She and Steve had dropped up to Dr. Welmer's office on their way to the farm for the weekend to see if he would go with them.

"Your know," she said, "I have a feeling that Cliff will bring forward the man he thinks would make the best president. If he does, I think it will be a man above reproach and with ability that is outstanding."

Dr. Welmer looked at her with scepticism. "So you are still convinced that that brat from Venus has the interests of the world at heart!" he said with a snort. "You aren't convinced that he's just raising hell on Monkey Island, and enjoying all the fuss he's causing."

"No I'm not," Mary said hotly. "I think he knows what's wrong with this civilization. Maybe he read it in a Venusian textbook. Maybe he figured it out by himself. That's beside the point. But I'm convinced that he is quite calmly going about setting things right, here in America, just like an American boy might work on a jalopy

until he got it to working."

"So I suppose if he came back and asked you to help him do it you would!" Dr. Welmer said.

"No," Mary said thoughtfully. "I've thought of that possibility, and what I would do if he asked me, and I've decided I wouldn't. I think he should come out in the open, tell the people what he thinks, be frank about everything, and get rid of the organization of thugs he has built up.

"Also stop stealing money out of banks," Dr. Welmer said bitterly. "He's started a fad in crime. Now bank tellers have to write down a list of all the checks they take in, the names on them and the amount, and the bank they are written on. I stood in line fifteen minutes at the bank yesterday to get my check cashed on account of it."

Dr. Welmer looked at Mary, his bitter expression changing.

"I'm glad you believe that way about Cliff," he said. "It means I won't have to regard you continually with suspicion, wondering if you are secretly working with him."

"Then you're going to take me off the assignment of keeping close watch on Mary!" Steve exclaimed in mock alarm, putting his arm around her waist possessively. "Then give me a leave of absence, boss, and let me do it on my own hook. I have a hunch it may lead to something big."

"Yes I am taking you off the assignment of watching Mary," Dr. Welmer said with poker-faced severity. "And we can't spare you so you don't get a leave of absence either." The he smiled and winked at Mary, adding, "But I can't help what you do on your own time, can I?"

"Got-ya, boss," Steve said with grave seriousness. He pulled up the collar of his coat and pulled the brim of

his hat down over his eyes. "Get goin', Mary," he said. "I'm follerin' yu'."

Mary darted Dr. Welmer a goodbye smile and went to the door, glancing in pretended fear over her shoulder at the desperate looking "character" at her heels.

IN THE hall outside he caught up with her and kissed her, while she pretended to be terrified. Then they laughed at each other and, arm in arm, went around to the elevator. Soon they were speeding along the highway to the Johnson farm.

It had been over two months now since that day when Cliff, who had been dipping his fingers into the international situation and also the internal situation, with the help of a gang of hired thugs and kidnapped scientists, had almost been caught.

For those two months his whereabouts had been a mystery. It had been known that he had built up a large organization of criminals who carried out his schemes to get the money they demanded as the price for their work. It was fairly certain he had had foresight enough to see the possibility of being discovered, and had built several secret bases for his operations.

But there had been no trace of him during those two months after his escape—until his exposure of the two presidential candidates.

The S. B.s (Special Branch, of which Dr. Welmer was chief) had found the magnet that turned the building into a dynamic speaker for the exposure of Senator Squeems, and the radio receiver and loud speaker built into Governor Breed's briefcase, though they had not fathomed the principle of its loudspeaker yet.

No one had bothered to find out how the criminal secret of each candidate had been uncovered. It had been un-

covered. The fact was enough.

The scientists in S.B. were in much the position that scientists would have been in the days of Newton, Leibnitz, Cardan, and those great thinkers of old if a modern youngster with his electric train, motor bike, two-way walkie-talkie and chemistry set complete with vitamins had dropped out of the sky and gone about his business of being a boy in a world of serious men.

Of course, that modern boy would have no intelligent pet spiders peeking out of his shirt collar, able to do his bidding, although the time may come when human knowledge may make such a thing possible. He would be stymied by the fact that he couldn't have walked into a store back in the days of Newton and bought a roll of copper wire. Cliff did not have that handicap because he merely made a paint of silver, and painted lines on paper for his wires.

Also, Cliff, though merely a boy physically, had been living nearly twenty years according to the estimate of Sam Johnson the farmer, and his active brain had soaked up much more knowledge in those twenty years than most earthbound mortals pick up in a lifetime.

What the adults of his race on far off Venus might be like was anybody's guess. The presence of Cliff proved that they often made excursion trips to the Earth. The fact that none of them had ever landed indicated that they did not care to bother with a race that was obviously uncivilized and unintelligent according to their standards. (We do not find any missionaries going to live with tribes of African monkeys do we?)

So unless Cliff got homesick and built a space ship and went back to Venus, or his parents decided it was necessary to land and look for him, it seemed fairly certain he would go

on mixing in the affairs of men until he grew up. Since this would obviously result in the disruption of organized society, it had become imperative that he be found and stopped in some way.

CLIFF had foreseen this reaction of the human race and had prepared for it. He had also seen that he would need many more hands than his own to carry on the many schemes his active mind dictated.

When he had stood on the edge of the hay loft and looked down at the government men, and realized that they had found him because he had underestimated the reasoning ability of Dr. Welmer, the man in charge of the group, his mind had grasped at the reality and appraised it.

He could have killed them all. Such a course would have been futile because obviously the Johnsons would not have condoned it, and anyway he had a great deal of affection for them. So after the one shot that knocked the flashlight from Dr. Welmer's hand he had quietly slipped down the escape tube and gone to a carefully concealed underground garage a mile away, and driven to the secret headquarters he had built for this time.

This headquarters was an old mansion near Chicago which an agent of his had picked up for practically a song. Vast underground rooms had been carved out underneath, and the scientists Cliff had selected and had kidnapped had been imprisoned here and set to work.

Also the leaders of his mob contacted him here, although they never saw him. He had known instinctively that the sight of his boyish body, bulbous head, and knock-knees, would have destroyed their confidence in his leadership. Invisible, he was a mastermind to them, whose schemes brought

them fabulous riches. His orders came to them through curious gadgets which they found in their rooms, or slipped into their pockets in some mysterious fashion. Gadgets that looked like innocent articles, but which spoke to them, and heard what they answered.

So, as the master-mind of a far-flung secret organization which he had built up while himself remaining nothing more than a voice, Cliff had to content himself with staying in the secret suite of subterranean rooms which had been made for him—alone with his brooding thoughts which toyed with the destinies of men. Alone—except for his spiders, which were not ordinary ones.

Especially was the one which stood with all six of its slender legs firmly planted on the table surface directly in front of Cliff not ordinary, for he was, in a way, the chief of the other spiders. In his glittering eyes a psychic might have discerned a glint of worry over his giant master. He *was* worried.

He knew the thoughts that were troubling his master, and for the first time grave doubts assailed him as to the wisdom of those thoughts.

THE newspapers naturally played it up big. So did the news commentators. The mystery of the thing gripped the imaginations of the people as nothing else had ever done. All anyone knew was that time had been bought on all networks so that some unknown person could talk for half an hour. Who that person was, and what he would talk about, was the big mystery.

It was coupled with the presidential election. It was rumored that a new candidate was entering the arena, and that secrecy was being used to prevent any attempt to besmirch his character while he talked.

It was also rumored that the myste-

rious "voice" that had ruined the reputation of the two party candidates was coming out into the open, and would offer himself as a candidate.

As rumors usually do, they covered every conceivable possibility, so that someone had to be right. The lucky one would forever after fancy himself a "global intellect" and bask in the admiration of his wife, if he was married.

Such is the course of prophecy and insight into world affairs. A thousand people make a thousand wild guesses. One of them is right. Therefore there is "something to" prophecy. And maybe there is.

But the man who walked into the Tribune Tower at five minutes before seven and presented himself as the one who was to talk to the nation had not been "prophesied" by any of the wild guessers. They had been right only in their guess that he was offering himself for the office of President of the United States.

The officials of the broadcasting studio had been pacing the floor worriedly before he arrived—afraid he wouldn't come. When he did arrive they paced the floor, wishing he hadn't shown up.

He was a nobody! No one had ever heard of him. No one recognized him! And he didn't even give his name!

In appearance—well, he did look quite a bit like Lincoln. He was six-foot-three, Skinny, a grave looking face that was wrinkled in semi-folds, with a large mouth, black hair, and thick black eyebrows.

He wore a brown business suit of the forty-dollar type, a white shirt that had been put on fresh from the store, and a blue tie that had cost only a dollar. With his black shoes and gray hat, he had on no more than seventy dollars worth of clothes.

A nervous man who paid that much

a year for the upkeep of his neat mustache ushered him into the room where he was to speak, then quietly faded out.

At exactly seven o'clock the sign lit up that meant the microphone was on the air.

THE man cleared his throat mildly, then repeated the operation more positively, so that the first sound to spread over the nation and come out through fifty million receiving sets was far from "presidential."

Then he began talking. His voice was deep and kindly. Untrained, it still had the slow, distinct quality that implants its meanings on the mind firmly.

"I have been reading," the man said, "of the mystery and interest centering about this broadcast time. To tell the truth, it is as much a mystery to me as to all of you who are listening in. I'm going to be perfectly frank with you.

"I've never held a public office of any kind. I can't even point with pride to a record as a successful deputy sheriff, let alone one as a governor of some state or a senator from some state.

"Up until two weeks ago I had never thought of the possibility of being a politician. I would rather have been a bank robber. There's no responsibility to being a bank robber, you know. Not that I ever was a bank robber. I once stole a dime out of my mother's purse when I was ten years old. She found it out and my father gave me a sound thrashing. That cured me of stealing right off, before I had done enough of it to be really good at it.

"So I don't feel, myself, that I am really qualified to be a politician. When those fellows came to me and asked me to run for president I thought they were crazy. I kept on thinking so up until right now, I thought it was a gag.

"I've always had ideas about things, and I've always expressed them, when anybody wanted to listen. Those fellows said that my ideas were good, and that that was the reason I was being asked to speak to all of you over the radio. So that is what I'm going to talk about; my ideas on what would be a sane government for our country. You don't have to elect me president. But if you put somebody in office with experience, who would try to carry out the principles of sane government, I would be very happy.

"What is a democracy? I've always asked myself that question and governed my ideas about government so that they would try to answer that question. First and foremost, a democracy is a government where everybody born into the world is allowed to develop his full capacities, just as a garden is a place where plants are allowed to grow up and bloom. But also, just as a flower can't bloom if it is choked out by weeds, hemmed in by other plants that are also trying to bloom, and having to fight for a place to send down its roots, so also the individual must have room—have his rights and dignity protected.

"So the government has a responsibility toward the individual to provide him with the opportunity to find the things that will develop his full capacities, and to protect his dignity as an individual.

"That is only half the picture, however. The individual has a responsibility toward the nation of the same kind. He must so conduct himself that he doesn't infringe on the rights of others dictatorially, and he must do his part in providing the government with the opportunity to develop its full capacities. It is a mutual exchange and a reciprocal responsibility.

"It's the basic must of a democracy.

All legislation, all law enforcement, all foreign relations, must be in line with this fundamental relation or we cease to have a democracy. It is to society what the arithmetic table is to business. Business could not be stable if one business man said that two and two are four and another said it was seven. Democracy can't be stable if one man can steal a million dollars and be praised, and another can't steal a dime without being sent to prison.

"Democracy can't be stable if one man can be a dictator over another or use threats of force or coercion to make him do his bidding. That is basic.

DEMOCRACY is built on experience, too, in addition to basic principles. This experience is embodied in the constitution, in precedent in law, and in the millions of laws that are in force in separate localities.

"Democracy is also built on intelligence and planned direction embodied in congress, and the state legislatures.

"A democracy is like a huge person. It has the millions of cells, or individuals. This is the body. Abuse of the parts of the body results in sickness. It has the various local departments of government which regulate commerce, trade, and conduct. These are the endocrine glands. They must be balanced or they throw the whole thing into maladjustment.

"It has the legislative bodies which are the brain—the intelligence. It has the legal departments which enforce and pass judgment on violations of the laws. These are the liver and other organs which take the poisons out of the system.

"But above all, at the head, must be the will; the judgment. A man without a sane, common-sense judgment, no matter how healthy or smart he may

be, never gets anywhere. If he has good judgment he can go into any line of work and make a success of it.

"In a democracy the president is the will and the judgment of the whole. Just as you can't stop your heart from beating by an act of will, or make one of your arms grow twice as long as the other, so also the president can't affect violently the routine of the nation. On the other hand, just as you, by poor judgment can in the long run make yourself into a successful, prosperous person, so also the president can produce vast changes for the better or the worse of the nation.

"You can't become a successful business man unless you know sound business practice. You know what you are doing or you wind up a failure. Your president should know what he is doing also.

"History has shown that very few presidents really knew what they were doing. They weren't versed in sound basic principles.

"Every system of government has its inherent weaknesses and points of vulnerability. So has our own. It is entirely possible to set up a dictatorship in this country within the bounds of the constitution and existing procedure. It is possible for any president we might choose

"No government we could devise would be entirely free of loopholes through which it could be made a futile screen to shield its leaders while they destroyed it.

"We must face that fact. We must choose a man who recognizes those weaknesses of democracy as well as one who knows its strength—not to take advantage of them for his own selfish ambitions, as he well might, but to allow for them in his job of piloting the nation."

THE man talked on and on, elaborating his theme of sound basic principles, his voice deep and nice to listen to—apologetic and modest at times, firm and resolute at others. Finally he finished and turned away from the microphone.

The studio manager rushed into the broadcasting room.

"Just a minute, he said. "You've talked for half an hour, and I'm sure that you've impressed the people favorably. But what is your name?"

"Oh, that's right," the man said contritely. "I did forget to tell them what my name is, didn't I?"

He stepped back to the microphone.

"You're going to be disappointed, folks," he said sadly. "I'm Harvey Jones, an insurance salesman, and not a very successful one, either."

REPORTERS, in attempting to describe the reaction of the public to Harvey Jones, so that the people could pay a nickle to find out what their reaction was, immediately discarded the word, stunned.

To a land of Li'l Abner fans, movie addicts, and Lincoln worshippers he was a "natural."

To the SBs he was another blind alley. He had never heard of Cliff. When Cliff was described to him and his pranks outlined, Harvey Jones promised that the search for Cliff would go on if he became president.

When it was pointed out that he had undoubtedly been chosen by Cliff, and that it had been money Cliff stole from banks that had paid for the broadcast, Harvey had been all for withdrawing from the campaign for office. The SBs talked him out of it finally.

They did this by pointing out that if he became president, Cliff might contact him in an attempt to gain control of the country by using him as a blind,

and that it might then be possible to locate and capture the elusive youngster from Venus.

DR. WELMER was pacing back and forth, his nerves worn thin. For two months now there had been no move made by Cliff.

Lying open on his desk was one of the most remarkable books in the world. It was the collection of reports on Cliff, his activities, and the machines he built.

"It would only take one little thing added to that report to make me go out and cut my throat," he said angrily.

"What's that?" Mary asked, a smile playing about her lips.

"If we were to find out that Cliff didn't run away," Dr. Welmer said, "but that they threw him overboard to get rid of him because he was a half-wit, where he came from, then I would realize how hopelessly unintelligent the human race is."

Steve began to laugh. He couldn't stop. Mary joined him. That was too much for Dr. Welmer who had to join in.

Finally Steve quieted down.

"It is funny, at that," he said, wiping his eyes. "A new variation of the old joke where somebody says, 'that guy is the toughest fellow I ever saw,' and the tough fellow says, 'Aw, shucks. Where I come from they call me a sissy.'"

"I guess it is," Dr. Welmer said dryly. "We know a lot to back it up, too. The adults of Venus come here to Earth on regular pleasure cruises. They never land. They have space ships. One of their kids is smarter than our geniuses. What does that add up to? Simply this. They don't land or contact us because we have nothing to offer them in the way of materials or cul-

ture. They don't try to wipe us out and colonize the Earth. Why? They could live here without any trouble. Cliff doesn't experience any trouble with our gravity or atmosphere or food. I think they have no desire to expand because they have plenty of room for expansion left on their own planet. Maybe giant cities under that cloak of a cloud layer.

"In this report book are fifteen major developments in electronics which experts believe we could not have discovered by ourselves for several centuries yet. They are so simple that it is quite probable that Cliff figured them out for himself, although he probably learned them at home.

"Take the vacuum tube. It's a big, expensive thing at best. What does Cliff do? He embodies the principle of the vacuum tube in a piece of solid silver. The same principle of action in every detail except that it will operate just as good a million years from now as it does now. A vacuum tube wears out in a short time.

"Our experts work on it for months and finally understand it. Now the government is licensing it out to radio manufacturers.

"But what about his source of power? We don't understand it. We get radio circuits drawn on paper. They are radios, and work. In some of them the source of power is a fancy battery setup of paint and chemicals on the paper. In others there isn't any source of power, but electricity flows in them.

"Take those tunnels he bored on the farm. It is estimated that if Cliff had done nothing else but bore those holes while he was there, working twenty-four hours a day, it would have taken a continuous application of thousands of horsepower to do it. What does he do? He takes an ordinary radio, monkey keys with it, and draws power out of thin air. We don't know how."

"I REMEMBER him telling me something about that once," Mary said, a startled look of recollection on her face.

"What did he say?" Steve asked eagerly.

"Let's see now," Mary said slowly. "I want to get it straight. I think he said that it utilized the basic energy vanishment of the ether. That doesn't sound quite right. I know it didn't make sense at the time, either; but the combination of words was unusual."

"Try to remember," Dr. Welmer said anxiously. "If you can remember the exact words, we can hand the phrase over to our best theoreticians and see what they can make of it."

"He said something about energy before that," Mary said, a faraway look on her face as she went mentally back to the time she had been listening to Cliff talk about it. "He said that energy as defined in our textbooks was okay, but that it was an unnecessary concept and led to an erroneous viewpoint of activity. He said our law of conservation of energy was false; that the Earth itself was a huge energy sink, where the basic ether energy rushed in and simply ceased to exist."

"Speak into this recorder," Dr. Welmer said, hastily opening the door of a radio cabinet and handing Mary a Microphone while he snapped switches.

Mary repeated what she had said, then went on.

"Gravity is merely a total effect of this energy vanishment," she said. "Atomic explosion is another effect, diverting ether energy from its normal medium and translating it into linear motion of matter. There are other subterfuges which take advantage of this basic relationship between the ether and matter, making it possible to draw energy from the ether like you

take water from a faucet. Oh yes, he used the expression, 'probability channels,' too. How did he use that now? I think he said—oh yes, he said that all our sources of power and even our scientific study was just overall statistical illusion, and that until we realized that we would never climb out of the age of savagery.

"He said we looked at a gas as having a temperature of so many degrees—say fifty degrees centigrade. Until we could look at the gas as a mixture of gases, some at temperatures of a thousand degrees, and some at temperatures of freezing and below, and learned how to build up probability channels to separate them, we could never have anything but a wasteful dissipation of our natural power sources."

"Go on. Go on," Dr. Welmer and Steve said together.

"He said that our scientists for the past few generations have been nothing but blundering intellectual elephants—muscle giants, trampling the trees and plants and classifying only the forests; the mass effects and positional illusion of reality. To become civilized, he said, we must learn that all we now know is based on mean value and rates and inseparable vector blends, whatever that is."

Mary paused, frowning.

"Anything more?" Dr. Welmer asked.

"There was more all right," Mary answered. "But I can't recall it now. He said something about what we thought of as infinitesimals were really stellar magnitudes in the universe, and that we would have eventually to deal with them that way. There was something he said about the ether. All I can remember is a vague recollection that he called it a dual ether. That's all."

Dr. Welmer played back the record

in the hope that Mary could recall something else. She could add nothing more.

"Well," Dr. Welmer said with a grim smile on his face. "The scientists have been going nuts over Cliffs gadgets. They ought to go completely batty over this. I'll have a secretary type this out and send it to Washington right away. By the way, Mary." Dr. Welmer's face wrinkled with a pleased look. "The government is charging royalties for use of Cliff's things by factories. The money is being used to pay back all the money he's stolen. Unless his thefts jump a lot over their present rate, the royalties will catch up with him so that he won't owe a cent by the time we catch him. If we *ever* do."

THE Democratic party had discovered that Harvey Jones was a democrat, so they had held a special convention and railroaded him through as their candidate for president. That was all right by him, because he had been wondering how he could pay for his living expenses, sell insurance, and tour the country all at the same time. The party gave him a nice expense account from campaign donations.

The newspapers found him a veritable gold mine of interesting comments.

At one of the almost perpetual press conferences he granted because he didn't realize he could decline, a reporter had asked him his views on business and the unions.

"I heard a story once," Harvey said in reply. "It seems that there was a fellow walking along a road on a hot day. He came to a well at the side of the road. There was a hand pump and a tin cup. He pumped for ten minutes and all he could get out of the pump was half a cup of water.

Finally he went up to the farm house and told the farmer his pump was out of order.

"The farmer said, 'No it aint't mister. I've just got a bleeder valve hid in the pump. While you were pumping yourself that half-cup of water you danged near filled my storage tank. Come on in and help yourself. You've pumped more than you could drink in a month as it is, so I guess you've earned a drink.'

"The way I look at it," Harvey said, "a working man is like that thirsty fellow who asks the farmer for a drink; the farmer figures the water pumped into the storage tank is all his and won't give the man a drink.

"All the wealth in the country, produced by miners, lumbermen, factory workers, and so on, could be likened to the water that came out of that well. The workers wages are like that half a cup of water that came out of the mouth of the pump. Not quite so exaggerated in proportion, but the same in principle. Getting a fairer share of the water into the cup of the man that pumps the water is what we should hold in mind when we start figuring out what is wrong with capital and labor."

Another reporter asked him what his foreign policy would be if he became president.

"Well, now," Harvey said with a chuckle. "I don't quite know what you mean by foreign policy. I don't pretend to know all about everything. I don't even know what I would do if I became president. I keep thinking in my mind tha the people will come to their senses before it is too late, and elect one of these professional politicians who knows all about ti.

"But I believe that when a foreign government says or does something I would ask myself just what I would

do in his place. If I wouldn't do what he did I would try to understand why he did it different than I would. The chances are he had a good reason. Then if the reason interfered with the welfare of law-abiding countries I would raise hell with him and make him stop doing it. Frankly, I don't think there's any country right now that I would see fit to raise hell with unless it's Texas. That beefsteak I had for lunch was pretty tough. Something ought to be done about it."

And in that one wise-crack Harvey Jones ensured himself of the solid vote of Texas.

TO THE public he was rapidly becoming a Lincoln who would deliver them from the slavery of bureaucracy, the slavery of capitalism, the threatened slavery of communism, the impending slavery of dictatorship, the slavery to bosses, the slavery of free enterprise to unionism, or what-

In his own shrewd way Harvey Jones realized what was happening, and feared it. At night before going to bed he would heartily curse the day he had been lured to the microphone. In the morning when he got up he would resolve to end the whole farce before the day was over. But somehow the fence between desire and action seemed unsurmountable.

And so November rolled around, and Harvey became President Jones by the greatest majority any candidate ever received.

In Chicago at the time, he promptly went to Washington. Some newspapers carried the headlines **PRESIDENT JONES DESCENDS ON CAPITOL TO THROW OUT BUREAUCRATS**. That was farthest from his mind. He went there for only one

purpose, and he expressed that purpose to the acting President in a few words the first moment they were alone.

"Mr. President," Harvey said earnestly. "I didn't want your job, but somehow I couldn't seem to talk myself out of it. Now I'm scared speechless. Do you suppose I could sort of stick around and watch you for the rest of your term and learn a little about the job? I'd sure appreciate it if you'd let me."

The President proved he was a truly great man in his reply.

"Why certainly, Harvey," he said. "As a matter of fact, since I am done politically anyway, and the enthusiasm of the nation is a rare thing to have, I think we should make it seem like you really have descended on the capitol, and take this opportunity to build you up even more in the public mind."

MARY was in her office working frantically. She could see the entire store through the plate-glass walls of the office, and in turn the personnel could see that she was in, and bring the problems that had piled up awaiting her decision.

The phone rang constantly. People came in continually.

Customers crowded the aisles buying books and other merchandise.

A man in a State Patrol uniform came into the store through the revolving doors. Mary's eyes rested on him briefly, then turned back to her work as she decided he probably wanted a book.

The man glanced around until his eyes saw the office on the balcony with the beautiful young lady in it. He pushed his way gently but firmly through the crowded aisles to the stairs at the rear and climbed them.

At the door to Mary's office he

knocked politely.

At Mary's invitation he turned the knob and entered, taking his uniform hat off politely.

"You are Miss Johnson? Mary Johnson?" he asked politely.

"Yes," Mary nodded.

"Your mother was hurt in an accident this morning," the man said. "She's at the emergency hospital with your father. I was sent to take you over to her. She demanded that I do this rather than call you on the phone. She said a phone call would make you reckless and you might hurry too fast in your own car and get in a wreck yourself, so to please her I came over to take you to her."

Mary listened to this wide-eyed with anxiety. Then she got up from her desk and grabbed at her coat.

"Come on," she said as she went through the door.

The two of them hurried through the aisles to the front of the store. Outside, waiting at the curb, was a state patrol car, its motor idling. In the front seat two men sat relaxed.

"This way," the man with Mary said, taking her arm and leading her to the rear of the car. He helped her in and entered after her, closing the rear door. The driver started the car and it pulled away from the curb smoothly.

Mary sat down on one of the two leather upholstered seats which ran the length of the two sides of the back of the car. The man in uniform sat on the other.

Mary's face was pale. Her teeth were clenched on her lower lip. She sat silent and erect. Ten minutes went by; then fifteen. When twenty minutes had elapsed Mary began to grow restless.

Finally she said, "How much longer will it take to reach the hospital?"

"I guess you might as well know now as any time," the man in the state patrol officer's uniform said. "That story was just a ruse to get you in the car. And before you grow alarmed, the boss said to tell you that Cliff wants to see you. That's all. You won't get hurt."

Mary had half risen from her seat. As the full meaning of the words penetrated she sat back, relieved.

"Oh," was all she said. After that she remained silent, although her eyes carefully studied the appearance of the man opposite her. There was no way to see out and try to determine where she was going.

AN HOUR later the car turned and bounced over a gravel road for perhaps fifty yards, then stopped.

"I'll have to blindfold you now," the man said respectfully. "There's no use resisting because we have orders not to hurt you, nor to let you out of here until you consent to being blindfolded."

"All right," Mary answered.

After she was blindfolded she heard the car door open. Then she was led out of the car and into a house, down several flights of stairs and along a straight corridor. At the end of the corridor she was pushed gently but firmly through a door and then heard it slam shut behind her. She stood still, waiting for a moment.

"All right, you can take the blindfold off now." The voice was Cliff's, boyish and shrill.

She reached up and pulled the folded cloth from her head, dropping it on the floor.

Cliff stood a few feet away, a smile of welcome on his small face. He hadn't changed in appearance. Mary saw that at first glance. But in some subtle way he no longer looked quite

like a human being. She realized that he never had. It had only been his human personality and the familiarity with his appearance that came from long months under the same roof with him that had made him seem so before. These had grown dim in the months since she had seen him last, so that now he seemed different though he hadn't really changed.

"Hello, Cliff," Mary said uncertainly.

"Helo, Mary," Cliff said his voice almost pathetically eager in its welcome. "Let's go into my living room where it's comfortable. I wanted to talk with you. That's why I sent for you. Sorry I had to use a subterfuge. If I hadn't, I feel sure you wouldn't have come—at least not without notifying your friends in the S.B. so that they could follow you."

"You're right there," Mary said with cheerful frankness, her hands patting her hair back into place. She followed Cliff, marveling at the new strangeness of appearance of his huge cranium and his squat, knock-kneed body. From her absoluteness of human standards she pitied him in his grotesqueness. And he, walking ahead of her, pitied her for her subhuman though curiously beautiful figure.

The living room was expensive looking. Fifteen by twenty feet, with an eight-foot ceiling, its oriental rug alone was worth thousands of dollars.

It was decorated and furnished by someone who really knew interior decorating. From the human standpoint there was only one thing wrong with it—here and there the gossamer strands of daintily woven spider webs hung, and on some of them hundreds of baby spiders climbed back and forth in play, weaving their own almost invisible webs between the strands of the parent web.

MARY drew back, remembering the web that had been meant to poison the president, that Steve had told her about.

"Don't be afraid," Cliff said, reading her thought. "They only coat their webs with poison when there is some reason for it, and there isn't any reason for it there. Sit down while I fix you something to drink. We'll have lunch shortly. After that we can get down to business.

"But right now I want all the news. How's your mother and father? And how is your sister doing? Tell me all about them. I get very lonesome for the times at the farm once in a while." His voice was eager and wistful.

Mary dropped into a huge barrel chair and laid her head against its back. She closed her eyes to shut out the sight of dozens of spiders resting on their webs, their beady eyes looking fascinatedly at her. It was disconcerting, to say the least, to realize that those insects knew who she was, and had intelligent thoughts whirling around in their incredibly small brains. No doubt they were anxious to have news from home too and were waiting for her to speak.

The clink of glassware sounded from a modern liquor cabinet she had seen on entering. In a low voice she told Cliff all she could think of about present doings on the farm, and her sister's work in her senior year at college.

When she felt the coldness of a glass against her fingers she opened her eyes and accepted the cocktail, thanking Cliff with her eyes as she sipped at it.

After that she studied him closely while she continued about the farm work and her parents. She concluded with the happenings at her store—changes she had made, the way business continually improved, and how much money she was making now.

During all this Cliff remained expressionless, his curiously flat eyes under his bulging forehead watching her with an unblinking stare. And while she talked to him she thought of the many things he had done, and the way he created situations to control the national and international events.

She could imagine him relaxed in a chair in his room, his pet spiders crawling around the room and occasionally crawling up on his shoulder to be near him; some scheme for changing the world brewing those expressionless eyes.

Suddenly she shuddered and felt afraid. She wasn't afraid of Cliff. She feared what might come—what he might do. And she feared his power to do big things. It might have been good in more mature hands, but after all he was only a boy. What were the *motives* behind his machinations? Were they mature motives of a responsible adult? Or were they motives of capriciousness and disregard of the ultimate welfare of the race on this planet on which Cliff had dropped for a little excitement and adventure?

A melodious chime sent its throbbing note musically through the room.

"That's our lunch," Cliff said. He went to a sliding door in the wall and pulled it to one side, revealing a dumb waiter on which rested a tray that sent tantalizing odors into the room.

PROMPTLY at ten minutes before twelve Steve strode into Mary's store to take her out to lunch. He frowned slightly when he looked over the sea of shoppers and display counters to the large plate glass windows on the mezzanine through which Mary's eyes usually met his with a smile when he came in. She wasn't there.

As he made his way toward the rear

of the store he looked around, hoping to see her somewhere. One of the clerks who knew him stopped him and said that Mary had left over an hour ago with a State patrolman. She had seemed in quite a hurry, like someone had met with an accident and she was hurrying to them.

Steve turned back to the front of the store and stopped to ask the doorman if he knew anything about it.

"No sir," the doorman said. "She went out with a patrolman, all right. There was a highway patrol car waiting outside. But she didn't say anything to me about it or when she would be back."

His face brightened with a sudden recollection.

"It should be easy to find out though," he added. "I happened to notice that the license of the car was S-555. That's a catching number. Also the number of the car was painted on its side. It was number 54."

"Thanks," Steve said.

There were phone booths in one corner of the store. Steve found an idle phone and called the highway department. They informed him that car 54 was in the garage being overhauled. Its license number was S-555, all right; but definitely no officers had been assigned to it today, nor for the past week.

Alarmed, Steve called Dr. Welmer and told him what had happened.

"Quick," Dr. Welmer said, his voice low and excited. "Call back that officer and tell him to keep this quiet until you can get over. Tell him especially not to call the garage and check on the car. We've got to work quickly, and not make any mistakes this time. When you get over to the state highway department make sure your order has been obeyed, then get the chief to call me."

Steve hurried out of the store and climbed into his car. Going through town he used his siren to clear the way.

At the state patrol office he learned with relief that the man he had talked to hadn't called the garage to check on the car.

Dr. Welmer outlined his plan over the phone when the patrol chief called him at Steve's request.

"I want you to get every available man out on the highways all over the state," he said. "I want them to stay there, stationed every few miles on every highway and road. Get the city police and the army, too. I want it so that it will be possible to tell within a mile or so where that car reappears on its way back to the garage where it is supposed to be right now. Don't stop it or interfere with it in any way. And *especially* don't give that garage any reason to suspect that you know the car is out."

STEVE stayed at the highway patrol office, while Dr. Welmer contacted other states to make the network of watchers cover bordering states. Then there was nothing to do but wait.

It was four in the afternoon when the first report came in. A great deal of luck in the placing of men made it possible to narrow the point from which the car had come to someplace within a two-square-mile area of thinly scattered mansions with large grounds, near Chicago.

The car let Mary out a block from her store, and then drove back to the garage where it was supposed to have been all the time.

At Dr. Welmer's orders no attempt was made to follow the men who had been in it, although some good snaps had been made of them as they emerged from the garage by a man a

block away with a telephoto attachment on his camera.

None of the men were known to the police.

The moment Steve was informed of Mary's return he hurried down to her store. Dr. Welmer had cautioned him on what he might find.

"Remember, Steve," he had said gravely. "No matter what happens, you must not let Mary know that we know she has seen Cliff. If she comes right out and says so, don't let on that we knew about it. Be surprised. If she doesn't tell you that will mean that either she has willingly gone over to his side or there is some threat he made that has forced her to do so. In either case it's vital that she doesn't suspect that we know about where Cliff has his headquarters."

Now, as Steve pushed through the entrance to the store he wondered what he would meet—the same Mary, or a new Mary with a secret she was hiding from him.

She was in her office, her attention on the work piled on her desk. Steve pushed his way through the shoppers in the aisles to the back of the store without Mary seeing him.

As he climbed the steps to the mezzanine his heart beat faster. At her door he hesitated before turning the knob. Then, letting his face fall into a mask of careless good nature, he turned the knob and pushed the door open.

Mary glanced up.

"Oh, hello, darling," she said, rising and coming around the desk to meet him. "I'm awfully sorry about this noon, Steve. I was called out on business, and I expected to get back in time for lunch. Unfortunately I didn't get back until just a few minutes ago."

"Oh that's okay," Steve said carelessly. "Business is business, so long

as it isn't monkey business."

"Oh this wasn't monkey business," Mary said a trifle breathlessly.

Steve mentally kicked himself, as he told himself he had better be careful or he would upset the applecart.

"You look kind of tired, Mary," he said. "If you want to beg off on our date tonight just say the word. You wouldn't have any fun if you'd rather be home in bed, and I wouldn't enjoy it if I thought you weren't enjoying it too."

"No." Mary's voice was noticeably tense. "As a matter of fact, I think I would like to have a couple of cock-tails and get my mind off business. It would do me good."

"Good girl," Steve said smoothly. "I'll pick you up at eight and we can have dinner together, then dance afterwards. Okay?"

Mary gave him a grateful smile and nodded her acquiescence.

He stepped back. His hand was on the door knob.

"Steve!" Mary said, her voice tense.

He turned back toward her, his heart leaping wildly in the hope that she was going to tell him the truth.

"What is it?" he prompted.

Mary hesitated, then she turned toward her desk.

"Nothing," she said. "I'll see you at eight o'clock."

STEVE'S lips were compressed grimly as he descended the stairs to the main floor and made his way out of the store. At the corner drug store he called Dr. Welmer and told him about Mary's silence on her trip.

"Well," Dr. Welmer commented. "Maybe it's better that way. Don't blame her, Steve. There must be some very good reason for her silence."

"What's the plan for catching Cliff?" Steve asked.

"We're going to take it slow this time," Dr. Welmer said. "Our SBs are covering the area carefully. First we're checking with county records on ownership of those houses. That may bring out which one it is without having to do anything that might bring our activity to Cliff's attention. Also we're checking with local stores and mail carriers, and with the telephone and telegraph companies. All those sources are sure to turn up the right place. Then what we do will be determined by the layout of the house and grounds."

"It's certain that Cliff has his escape planned and prepared for, so that the moment we set foot on his hideout he will be away to the next one, wherever that may be. So what we've got to do before we make our attempt to capture him is try to find out where his escape car is hidden, and have a tight cordon around the area. Even then with his unknown weapons he may break through."

"It'll probably be a week before we're ready to act. Meanwhile report every day to me."

"I will," Steve said grimly.

DR. WELMER chuckled mirthlessly to himself as he slowly put the receiver back on its cradle. He had lied to Steve. Deliberately. He had no intention of giving Cliff a week in which to prepare.

Before the highway patrol car had gotten back to town and delivered Mary at her store Dr. Welmer had determined which of the mansions in that suspected area was Cliff's headquarters.

A phone call to Washington had started things moving. Dr. Welmer had drawn three circles around the point on a map which corresponded with the location of the house. The

radius of the first circle was one mile, the second was a mile and a half, and the third was three miles.

Every street and intersection along those three circumferences was even now being rapidly manned by army personnel in jeeps, with light machine guns, gas grenades, and two-way radio.

A special detail of fifteen jeeps with picked crews were being readied for the attack on the hideout. The attack was going to be swift and merciless. Cliff would be given his chance to surrender peaceably. If he didn't accept it, the house would be attacked in force. The men had their orders that if they met resistance they were to show no mercy.

Dr. Welmer drummed his fingers on the polished surface of his desk while he waited for the next of the frequent reports on the progress of his attack plan. On his face was a look of triumph.

Cliff would undoubtedly have escape tunnels in all directions from the house. Unless these ran more than three miles he would run into a tight cordon of armed soldiers who would stop and search every car before letting it through.

The cordons would remain until Cliff was captured. If he didn't show up, every house in the large circle was to be searched and occupied until it was absolutely certain that Cliff was not in hiding in that area.

If Cliff could not be found, the house where he had his headquarters was to be blown up, and the grounds around the house were to be mined and exploded so that any secret underground spaces would be exposed.

There was good reason for Dr. Welmer's look of satisfaction. There was no possible way for Cliff to escape from the trap being laid. It was closing in too quickly and too quietly for him

to notice it in time to avoid it.

The phone rang. It was the army officers in charge of operations.

"Everything is ready, sir," he said briefly.

"Fine," Dr. Welmer said. "Issue instructions to begin searching cars now. And don't let any cars go into the center circle. We want that area as empty as possible before we close in."

"You're coming up to be here when we close in on the house?" the officer asked.

"Right," Dr. Welmer said. "It'll take me about an hour to make it. I'm starting right now."

He hung up and put his hat and topcoat on. Soon his car was speeding along the highway its headlights boring a path through the early darkness of the November night.

THE jeeps were parked end to end at the curb when Dr. Welmer pulled to a stop. An officer came to meet him when he climbed out of his car.

He saluted sharply and then held out his hand, saying, "I'm Lieutenant Peterson, Dr. Welmer. Everything's ready for you to say the word."

"Glad to know you, Peterson," Dr. Welmer said, shaking hands.

He followed the officer and climbed into one of the jeeps with him. Then the procession started away from the curb and moved slowly down the street.

"The grounds around the house are fairly free of shrubbery," Peterson explained. "We'll just drive in on the driveway and circle the house rapidly. When we have it completely circled so that no one could escape we'll switch on the loudspeaker and you can order the fellow to surrender peaceably. It's your show, and we have orders to follow your directions to the letter."

"Fine," was Dr. Welmer's only comment.

The procession paused at a barricade across the street. Soldiers with machine guns mounted right in the street stood silently, ready to jump to their guns and bring any car to a stop forcibly if it would not stop at the signal of the guards.

Lt. Peterson stood up in the jeep and waved to the men barring their way. They stepped aside, saluting him.

"This is the three-mile baricade," Lt. Peterson explained. "They have been cautioned not even to let men in jeeps through unless they know them. It's possible that the escape might be attempted with the aid of an army jeep and uniform."

"We ough to get the brat," Dr. Welmer said. "I can't see that we've overlooked any possible contingency."

Two more street barricades were passed. Then the procession turned down a side street. Headlights went dark and the cars slowed to a steady crawl.

The lead car, just ahead of the one Dr. Welmer and Lt. Peterson were in, turned toward a driveway opening in a high iron fence. A gravel road shone whitely, leading in a gentle curve toward a large house that loomed darkly behind large trees, sparsely scattered over the ground on the other side of the fence.

The crunch of gravel as the lead car's tires bit into it was a loud staccato sound in the quiet of the night. A roar of motors getting into high speed was accompanied by the blinding glare of headlights and directed spotlights that suddenly came on in every jeep.

In a matter of seconds they were around the house and halted, evenly spaced and about fifty feet from the building.

The old mansion, revealed in the

glare of concentrated light, was an ornate affair about fifty years old, built in the days when a dollar bought an hour of careful, experienced carpenter's labor.

When the last jeep motor died down and silence descended, the loud speaker came to life. Dr. Welmer took the hand microphone handed him by the technician and put it to his lips.

"All right inside," he said. "We know that Cliff is in there somewhere. Inform him that Dr. Welmer is out here and for him to come out peaceably. He can't get away. We have military barricades for miles in every direction. He will stand a much better chance of living out the night if he gives up here rather than trying to escape and being shot down by soldiers.

"We'll give you five minues to tell him and come out. After that we will start firing."

Three minutes went by with no sign of life from the house. Then a light went on and the front door opened slowly. A cane with a white handkerchief tied to it came out into the open, followed by a man.

The man walked slowly across the porch and down the front steps. At the foot of the steps he stopped and called Dr. Welmer's name.

"This way," Dr. Welmer responded, standing in the jeep and holding his hand up.

The man crossed the lawn to the jeep. Guns moved to keep pace with him.

Ten feet from the jeep he halted.

"The boss sent me out to tell you he wants to talk with you before he surrenders," he said, his voice trembling slightly.

"Don't do it," Lt. Peterson whispered. "If he gets you in there he can use you as hostage."

"I know that," Dr. Welmer whis-

pered back. "But I want to get him alive if possible. I don't think he will surrender if I refuse to grant his request."

He jumped out of the jeep and approached the man from the house. The man promptly turned and started back the way he had come.

Dr. Welmer followed him.

"We'll give you fifteen minutes," Lt. Peterson called after him. "After that we're coming after you."

INSIDE, the guide led him through a reception hall to a blank wall. The wall slid back revealing an elevator. The elevator descended about twenty feet, slowly, then stopped with a rattle of cables.

"This is as far as I can go," the guide said. "Just follow the corridor to the end and knock on the door you'll see."

He opened the elevator door and stood to one side so that Dr. Welmer could step out.

The walls of the corridor were painted white. The floor was covered with rubber tile. It went straight for a hundred yards. Dr. Welmer realized that he had passed under the circle of jeeps above—perhaps off the property completely.

The door at the end of the corridor was of metal. He knocked firmly, and at once the door swung back.

Standing on the other side was the figure he had seen only once before, and that in the flash of an exploding gun, for only a split second. Yet he remembered every detail of it.

"Good evening, Dr. Welmer." Cliff's voice was even and unemotional.

"Hello, Cliff," Dr. Welmer replied. "I've been looking forward to this moment for a long time."

Cliff smiled.

"And I've been trying my best to

avoid it for an equally long time," he said. "I suppose I owe your visit to my inability to remain alone indefinitely without any contact with a human being whom I felt any affection for. In spite of all my precautions to keep my meeting with Mary secret, something must have disclosed it in time for you to follow the car that brought her here."

"No," Dr. Welmer said kindly. "We didn't know she was missing until an hour after she left the store."

"Then how—?"

"I put out a pattern of watchers to see where the car reappeared," Dr. Welmer said, a note of derision in his voice.

Cliff blushed.

"I always underrate your capabilities," he said disgustedly.

"I think we have you trapped this time," Dr. Welmer said. "Want to hear the details?"

"Yes," Cliff said interestedly. "It will pose an intriguing problem whose solution may mean my continued freedom."

"We have the house surrounded," Dr. Welmer explained. "If I am not out fifteen minutes from the time I came in here soldiers will come after me. They will carry walkie-talkies. If contact with them is lost the house will be destroyed without regard for their safety, because they will be presumed to have been killed."

"At varying distances in all directions from this area are successive barricades, so that if you try to escape underground, when you go to the surface you will be hemmed in by these successive circles of guards and captured."

"I see," Cliff said thoughtfully. A faint crease appeared in his smooth forehead.

DR. WELMER'S eyes were fixed in fascination on this child from Venus. The curiously flat blue eyes were biologically meant for a place with very little light. The irises were contracted to mere pinpoints, but showed evidence of being able to open wide so as to detect light no stronger than that with which the moon lights up the landscape.

The forehead was perfectly smooth and rounded, rising and bulging outward gracefully immediately above the eyes. There were no eyebrows or eyebrow ridges in the bone structure.

Dr. Welmer estimated that the frontal lobe of the giant brain behind that forehead was probably larger than a normal human brain, and that the entire brain of the Venusian child was perhaps four times as large as the human.

The jaw line was smooth and the chin almost sharp in its point. The nose was equally sharp and even. The lips were normal, though the mouth was smaller than average according to human standards.

The cheeks were slightly rounded and the cheek bones occidental rather than oriental.

The skin coloring was white with a pinkish shade, like that of a boy who spends most of his time out of the sun. The neck was slightly large to support the weight of the head.

"You say you have only fifteen minutes?" Cliff said. "Well five minutes are already gone. That gives me five minutes to talk. I have something I want to say to you. That's why I asked you to come in before I left.

"You see," he went on hastily, "when I came here I thought as did my parents and all Venusians, that the human race was still millions of years from civilization in spite of their cities and airplanes and radio. I think differently

now. I have thought so since I first finished my study of your history. I am convinced that by occasional direction and correction of your historical trend you can be made civilized in a few years. That's what I intend to do.

"I realize that it may cost a few lives and require the breaking of a few of your laws as I go along, and that I could not hope to enlist the co-operation of your government, when I could not hope to make it understand what I am aiming for.

"As a matter of fact, in the final stages of my program to elevate the human race I must become what you call a dictator for a time. Knowing you and your race, I realize you would not countenance this for a moment if you could prevent it; so I must go my path alone, using money to buy the services of those who are selfish enough to put self above the good of the race from their own limited viewpoint.

"I'll succeed. There may be setbacks like the present one, but I'll succeed. I have perhaps two of your centuries of time in which to complete my work before I die of old age.

"You know," Cliff chuckled. "I could kill you where you stand very easily, but if I did, the scientists I have in other parts of this place might get killed if the soldiers decided to blow up the place before searching it. I'll have to let you go this time. Perhaps the next time it will be possible to eliminate you as a source of annoyance. You'd better get back to the surface now."

Dr. Welmer realized that Cliff was not surrendering. He must have some sure way of escape.

Faster than the eye could follow, Dr. Welmer's hand reached into his coat and withdrew an automatic. In the same movement he fired at Cliff.

There was a tinkling of glass fol-

lowed by the slamming of a door.

Too late Dr. Welmer realized that the figure before him had been merely a reflection in a mirror! A quick examination disclosed a thick door through which Cliff must have made his escape.

Hurriedly he returned to the elevator and went back to the surface. His call from the front door brought soldiers into the house.

It took half an hour to break down the door through which Cliff had made his escape. As it fell inward a blast of hot air swept out over the crowded men from a distant explosion.

Later exploration showed that Cliff had blown up the tunnel five miles away in the direction of Chicago. It took a month to clear away the debris and follow the passage to its end. It came out in the basement of an abandoned house.

IT WAS the day after this last hope of tracking Cliff had failed, that Steve and Mary dropped in to see Dr. Welmer. He gave them the news.

"In a way I'm glad," Mary said. "I believe in him. He's a lonesome little boy growing up in a strange world. I don't doubt but what he could build some kind of a ship that would take him home. He's intrigued by a problem here that holds him. His older and wiser fellow Venusians adopted a policy of hands off thousands of years ago and have stuck to it ever since. The human race three thousand years ago was a barbarous, savage race. I believe myself that there is hope for us now. I'm rooting for Cliff."

"So I notice," Dr. Welmer said coldly.

"That's right," Mary pouted. "Rub it in. I've told you that I had no idea what direction we took when I went to see Cliff. I've told you everything."

"Yes, I know," Dr. Welmer said. "But not until after it wouldn't have made any difference. There might have been some little thing that would have turned defeat into victory."

"You mean victory into defeat," Mary said firmly. "If something happens to Cliff the human race will go right on being barbarous. The atom bomb will wipe out all except a few hillbillies, and we'll start all over again on the upward climb."

"I wouldn't say that," Dr. Welmer objected. "These scientists Cliff had kidnapped to do his technical work for him succeeded in penetrating the mysteries of most of the stuff they were forced to make. We now have exactly three hundred and twenty two very important patents owned by the government and listed under the SB file as due to Cliff's activities. Among other things we now have the principle of tapping the energy of the basic ether without the dangers of radioactivity. We'll do all right."

He pulled out a cigarette and lit it with a self-satisfied air.

"And we still have an angle for getting a lead on that brat," he added, dropping the match in an ash tray. "Before long he'll contact President Jones so that he can pull the strings of government. Then we'll get him."

"I asked Cliff about that," Mary said.

"Yes?" Dr. Welmer prompted, puffing contentedly.

"He said he had no intention of ever getting in touch with the President, that the President was strictly on his own."

"What!" Dr. Welmer exclaimed.

"Yes," Mary said. "He said that the human race would never grow up by being led. It must be steered at times. The direction of its path through future history must be corrected by

someone who knows how to steer and where to head it. He said other things, too. Things that convince me he's right."

Mary looked at Dr. Welmer and Steve with a mischievous light in her eyes.

"I think I'll completely deflate you," she said quietly. "Those scientists that Cliff kidnapped and forced to build machinery for him? Hah! Did he ever have any need for the stuff they turned out? He could have built in hours all the gadgets he has used so far. It was just his way of teaching them the principles of science that the world needs to grow up. He told me that himself. He said that civilization is built on certain technological concepts, certain philosophical concepts, and so on. That these determine the shape of the civilization when they are so thoroughly absorbed by the race that the children learn about them from their toys and grow up taking them for granted.

"You think you have stolen a march on Cliff? Well, let me tell you something. You're doing just what he wanted and intended you should do. You're his slave by indirection. You do his bidding every day. You can't help it. The only way you could stop doing it is to turn your back on the welfare and progress of your fellow men and kill those scientists with your own hands and destroy all the patents whose basic ideas Cliff gave us, and all the people alive today who use them and know them.

"We are just puppets when a master comes along. He can play on our emotions—prod us into doing what he wants by appearing to try to prevent us. He can mold the mass mind at will so that you are helpless to change it back again. Look at the way Cliff picked the man he thought would make the best president and cleared the field

for him and prepared the stage."

DR. WELMER tapped the ashes off his cigarette thoughtfully, a wry smile on his face.

"Maybe you're right," he said slowly. "It reminds me of what a friend of mine said about the Communist party once. He said they had the power to rule this country by indirection if they only realized it. They could defeat any candidate for any office merely by supporting him to the exclusion of the rest.

"By the way," he glanced at Mary and Steve shrewdly, "I seem to remember seeing a strange glint in your eyes when you came in. Could it be that something I can't possibly guess is about to take place?"

Steve and Mary looked at each other guiltily.

"You're right," Steve said. "Mary and I are going to be married. Two weeks from today."

"Mm hmm," Dr. Welmer nodded his head with a look of being pleased about something.

"What's biting you now?" Mary demanded. "Instead of congratulating us you look like a cat that just ate the mouse."

"I was just thinking," Dr. Welmer said succinctly. "Could it be that Cliff had picked Steve for your husband when he arranged that affair in which you helped Steve out, and consequently got acquainted with him? By his well known indirection? Hmm?"

"Why—why you—" Mary began indignantly. A look of sudden realization dawned in her eyes. "Why! So he did!" she exclaimed. "There couldn't have been any other reason, could there?"

She looked at Steve and a slow flush spread over her face.

"So I've been took!" she said softly.

"Yes, darling," Steve said obedi-

ently.

TWO years were to pass before Cliff appeared again on the stage of history. During those two years there were rumors of a queer, boyish appearing man with a bulging head and knock knees in Russia, in South America, in Africa, and finally in the Orient. Rumor traced him—or someone like him, into the foothills of the Himalayas. There rumor stopped.

It stopped with the rumor that a queer but likeable monstrosity of a boy-adult had been seen trudging over the dusty road that led into the foothills of Tibet. The rumor had been brought to the civilized world by an Englishman.

"Queer chap—that," the Englishman had concluded his rumor. "Undoubtedly a native of some sort, but he spoke deucedly good English with an American accent. There were a couple of spiders crawling on his tunic. Poisonous looking things. When I pointed them out to him do you know what he said?"

The Englishman glanced at his audience with outraged indignation.

"He said, 'Yes, I know.' And the best of it is that I would swear I saw a glint of amusement in the eyes of those spiders. Or was it my imagination? The last I saw of the fellow he was walking along, his knees knocking together and his bare feet kicking up the dust. I felt sorry for him in a way. He looked so lonely."

Vignettes

OF FAMOUS SCIENTISTS

BY ALEXANDER BLADE

COLUMBUS, the Navigator, is believed to have been the first to express the opinion that the compass does not point to the geographical pole, and that the magnetic pole to which it does point must be a movable location, because of the continual variations of the directions to which the magnet points. Norman, a London instrument maker, was the first to call attention to the dipping action of the instrument. To the astronomer, Halley, we owe the first magnetic charts. Another London instrument maker, Graham, discovered the diurnal variations. Gauss, the mathematician, made an exhaustive study of terrestrial magnetism, and to Humboldt is due the suggestion of making systematic observations of the daily and annual variations at all available points on sea and land.

The earth has a magnetic equator, where the needle, when freely suspended at its central point, remains in an absolutely horizontal position. This line is an irregular one, crossing and recrossing the geographical equator at many places, but never departing more than about a dozen miles from it. At all locations to the north of this wavy circle the south pole of the magnet not only points to the north magnetic pole, but dips toward it. South of

it the needle points and dips to the south magnetic pole.

These magnetic poles do not coincide with the geographical poles. The northern one was discovered in 1831 by Sir James Clark Ross, on a peninsula called Boothia Felix projecting into the Arctic regions from the Canadian coast in latitude 70° N. and longitude 96° W., and hence is distant about 1375 miles from the geographical pole.

The south magnetic pole was discovered in 1842 by the same explorer. It lies on that part of the great Antarctic continent called Victoria Land at about latitude 73° S. and longitude 145° E., and is therefore about 1150 miles north of the geographical pole. In both cases it has since been discovered that these poles are not stationary localities, but wander irregularly from year to year within the limits of a circle of about 20 miles in diameter. In approaching the two localities the dip of the compass increases steadily and rapidly, and when the exact position for the time is reached, it assumes a vertical position. The cause of the wandering is ascribed to the continual slight changes in progress in the shape of the earth, each of which, to some extent, results in more or less of a displacement of its center of gravity.

Theater: A Revival at the Arena Stage

FILM
BUS

Troupe in Capital Gives 'Once in a Lifetime'

By HOWARD TAUBMAN

Special to The New York Times

WASHINGTON, Oct. 29—

Would the boisterous comic successes of yesteryear be any thing more than period pieces today? You get a lively opportunity to ponder this question at the Arena Stage, where the resident company's opening bill is Moss Hart's and George S. Kaufman's "Once in a Lifetime."

If you are old enough to remember the dark Depression days, you may recall "Once in a Lifetime" as one of the few things to cheer in 1930. A broad cartoon of Hollywood genius at work, the play defied the late Mr. Kaufman's gloomy dictum that satire is what closes on Saturday night.

Opening at the Music Box on Sept. 24, "Once in a Lifetime" had a run of 305 performances, a healthy record in the days before theaters were air-conditioned and before New York in the summer was acclaimed as a festival. The triumph of this play provided the late Mr. Hart with a happy ending for his autobiographical "Act One."

Although some of the lines and gags are dated, "Once in a Lifetime" is still pertinent and funny. The film industry has been through more upheavals than an old-time banana republic, but the more it changes the more some of its foibles remain the same.

In "Once in a Lifetime" the maneuvering for position is as explosive as it is fantastic. The dullest fellow in the place blunders into success and is gratefully named supervisor in charge of production. A rival company scores a coup with a spectacle based on the Old Testament, and Bible epics become the rage. Any resemblance to current history?

Not all history has stood still. No studio head today could be as confident as Glogauer, the mogul in "Once in a Lifetime," that "even if you



René Auberjonois

The Cast

ONCE IN A LIFETIME, a comedy by Moss Hart and George S. Kaufman. Staged by Zelda Fichandler, revived by the Arena Stage; scenery by Robert Green; lighting by Leo Gallenstein; costumes by Marianna Elliott. At the Arena Stage, Washington.

George Lewis	René Auberjonois
May Daniels	Geneva Bugbee
Jerry Hvlund	Roy R. Scheider
Susan Walker	Candace Hilligoss
Herman Glogauer	Tom Toner
Lawrence Vail	Alan Oppenheimer
Miss Leighton	Joy Mills
Melsterstein	Harry Berzman
Weisskopf	Ray Reinhardt
Kammerling	J. Robert Dietz

made a good picture you could make money." As for his pained outburst that a movie was costing him an exorbitant total of \$300,000, aren't the figures for "Cleopatra" 100 times larger?

Writers are no longer dispatched from New York to Hollywood in shipments of 16. And there is no evidence that they sit around for six months like Lawrence Vail in "Once in a Lifetime," seeing no one but their secretaries and the girl with the weekly pay

Kaufman Play Gibes at Hollywood Genius

envelope. Nevertheless, the sight of Vail forever immured in the Glogauer Studio's gaudy reception room vainly seeking to be recognized by anyone remains irresistibly droll.

In her staging Zelda Fichandler, producing director of Arena Stage, has invented a bit of Vail business, that would surely have amused the play's nimble-witted authors. Left alone on stage, Vail acts out the answer to the question of when he eats.

He takes an egg out of a pocket, cracks it into a glass ashtray, seasons it with sauce from a bottle pulled from another pocket and whips it with an eggbeater extracted from a third pocket. Then he drains the concoction. For swallowing egg raw Alan Oppenheimer deserves an award for valor beyond the call of duty.

It must be said that the fast-moving, hard-hitting farce is not quite comfortable in an open playing space. Nor does the permanent acting company of Arena Stage have the crisp, brash style needed for this sort of work.

René Auberjonois is satisfactory as the dimwit who chomps on Indian nuts, and who proves that movies can be produced with "no time wasted on thinking." Candace Hilligoss, Tom Toner and J. Robert Dietz are among the helpful performers.

"Once in a Lifetime" opened a week ago at the height of the international crisis. The Arena Stage could not have foreseen that some of its patrons, who play vital roles in national policy-making, would have to leave in mid-performance on opening night and that others would bring transistor radios for quick news briefings during intermissions.

By last night the audience was more composed, and "Once in a Lifetime" was free to earn the laughs it continues to command.

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Events today: "Andrea Chénier," Metropolitan Opera, 8 P.M.; Jan Smeterlin, pianist, Philharmonic Hall, 8:30; Gary Karr, double bass player, Town Hall, 8:30; Claude Monteux, flutist, Walter Trampler, violist, and Matthew Raimondi, violinist, Carnegie Recital Hall, 8:30.

Also, "The Bartered Bride," presented by Hollywood Players Opera Company, Judson Hall, 8:30; American Symphony Orchestra, presented by Contemporary Music Society, Leopold Stokowski, conductor, Museum of Modern Art, 8:30; Mannes College Orchestra, Carl Bamberg, conductor, Mannes College of Music, 8:30; Ralph Kneeream, organist, St. Paul's Chapel, Columbia University, noon.

Edward Downes will discuss Beethoven in the 10 Master Composer series at the Rogers Auditorium of the Metropolitan Museum of Art at 11 today.

Met's National Council To Meet on Nov. 8 and 9

The Metropolitan Opera National Council will hold its annual fall-membership meetings on Thursday and Friday, Nov. 8 and 9.

The group will also attend a dress rehearsal of Verdi's "Ernani" and an evening performance of Mozart's "Don Giovanni," in addition to touring Lincoln Center for the Performing Arts.

The council sponsors the Metropolitan Opera regional auditions, the winners of which are invited to the final auditions held at the Met each spring.

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SCIENCE FANS PUBLISH CHECKLIST

EVERY once in awhile your editors get requests from readers for information on some "out of print" science fiction or fantasy story or book, and we are unable to answer them because we do not have the information at our fingertips. But now we'll no longer have that difficulty. The reason is a pair of fans named Everett F. Bleiler and Melvin Korshak of Chicago who have spent several years of what must have been tremendous effort to compile the most complete checklist of fantasy books we've ever seen. In fact, it is the *only* checklist of this type of literature we've run across.

Melvin Korshak came into the office the other day and presented us with a complimentary copy of "The Checklist of Fantastic Literature", containing 452 pages, listing thousands of titles with complete information about them, even down to the number of pages in each, number of copies printed, etc.

The book was handsomely bound and printed. According to the jacket, it is published for the fans themselves, the collectors of fantasy fiction. There are, it claims, more than 5,000 titles listed, in two separate indexes, by title and by author. Glancing through it, your editor was pleased to find that a book he published himself as a fan, back in 1936, was included. Seven years, say the authors, were consumed in the exhaustive search for titles.

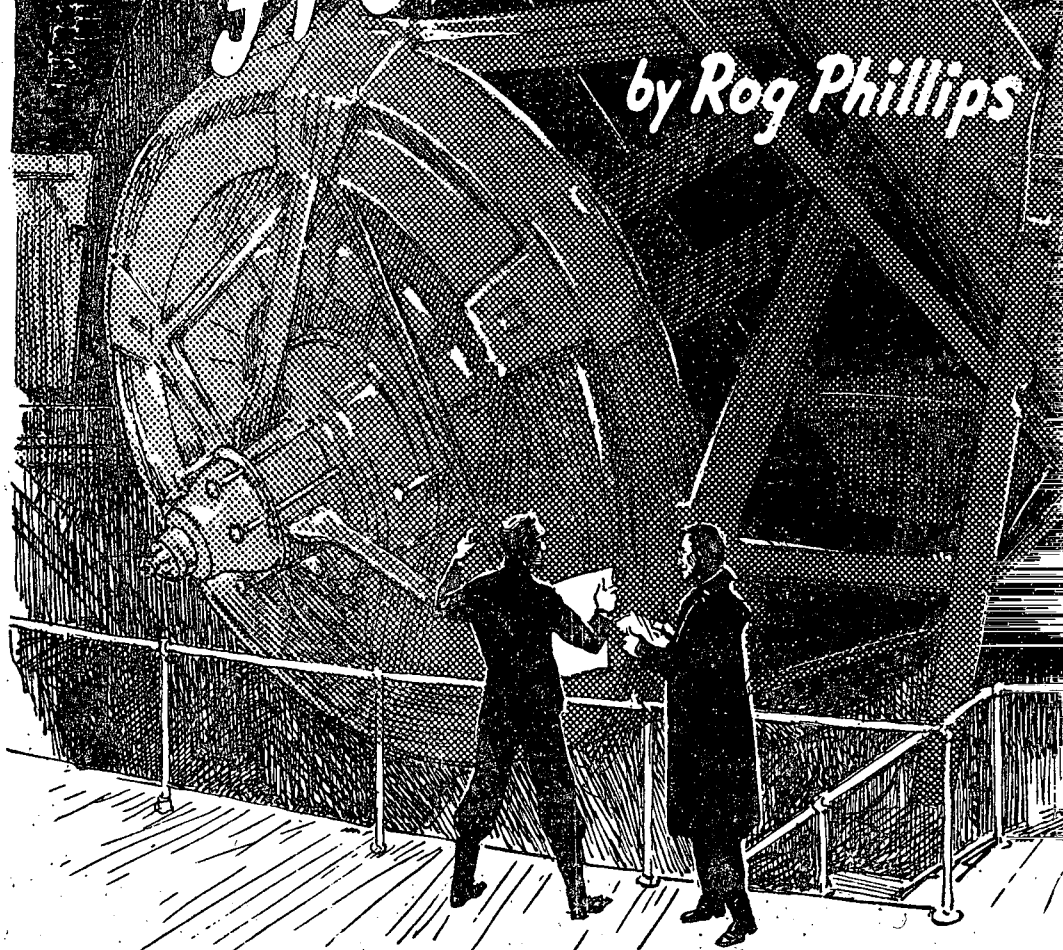
The book is entirely a private venture, a labor of love, and the boys, who call themselves the Shasta Publishers (5525 Blackstone, Chicago) have dumped more than two thousand dollars into printing it. We understand they printed it 8 pages at a time on a

tiny press. What a pair of fans they are! Imagine going to that length for your hobby, science fiction! We hope the boys are able to distribute enough copies among other fans to reduce some of the debt they've run into. We don't mind recommending that any of our readers who are fans enough to make extensive collections would find this book a tremendous help in completing or adding to their respective collections. The price, six dollars, will get the boys their money back if they can unload the edition, and we think they should! Why not drop them a line?

SPEAKING of fans, it seems Richard S. Shaver is one too! In addition to being an author, he's solved a problem we couldn't answer: His story "I Remember Lemuria!" and its sequel, "The Return Of Sathanas", plus his now famous "Lemurian Alphabet" have been put into book form by himself, every bit as tedious a printing task as was "The Checklist of Fantastic Literature" insofar as that department is concerned, and very handsomely bound. We've been sending Mr. Shaver his fan mail, and the tearful pleadings of many readers for back copies of AS with those two stories in them (not available) stirred him to the publication just for those letter-writers of the two stories. He offers it for three dollars (address: Box 74, Lily Lake, McHenry, Illinois) and if he sells them all, he'll get about half his money back. Now, there's an author for you — he is willing to lose money, deliberately, to satisfy a few fan letter-writers! We understand only 250 copies were printed.

STARSHIP from SIRIUS

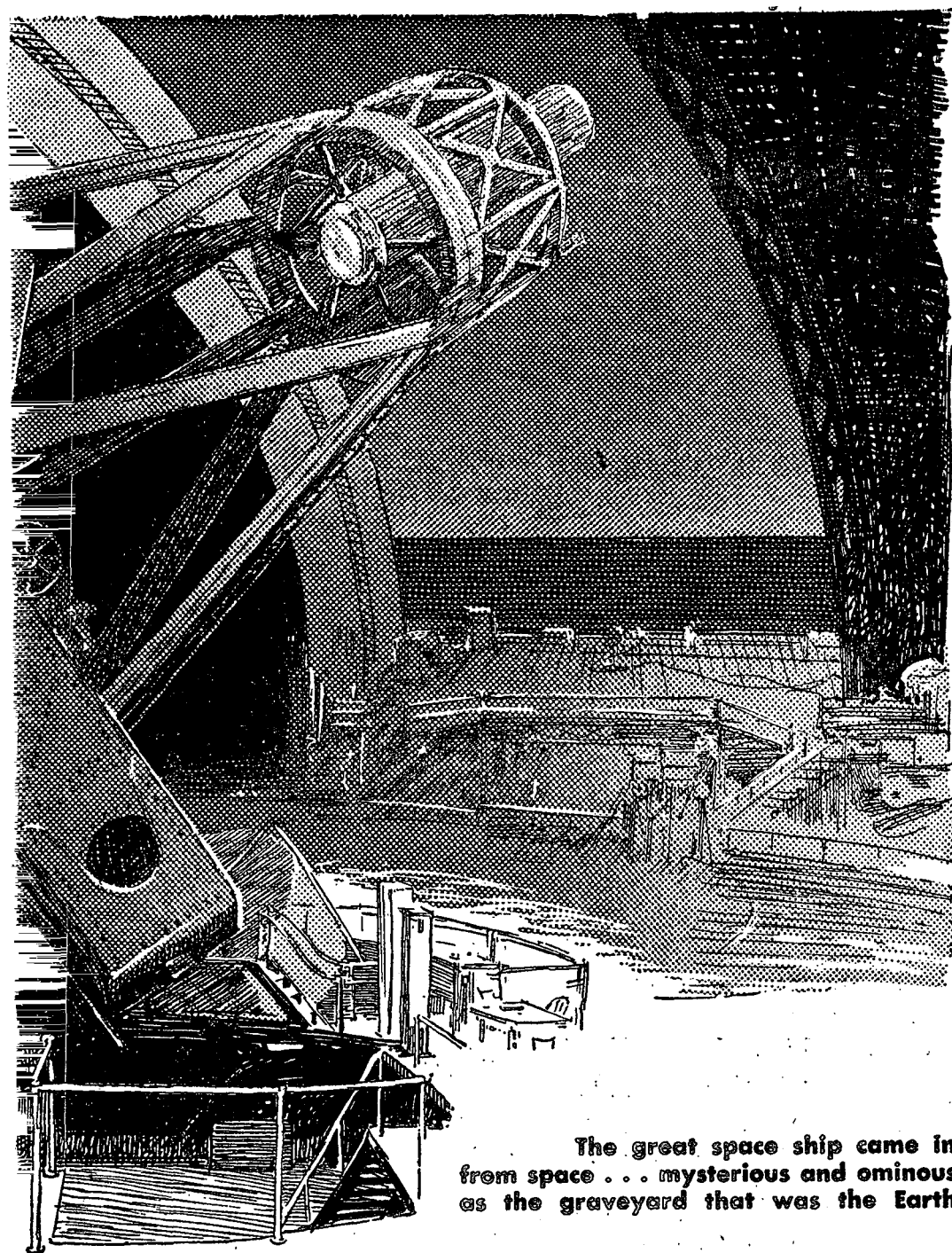
by Rog Phillips



THE silver sphere had been circling the planet for several days, going in the opposite direction to the two moons. It had slowed rapidly until now its speed was no more than half

what it should be to stay in its orbit; yet it did not plunge Marsward, but remained a uniform two thousand miles away from the surface.

Irwin Crabtree,—Dr. Crabtree to



The great space ship came in from space . . . mysterious and ominous as the graveyard that was the Earth

his fellows, turned his giant telescope on it the moment it appeared above the horizon and (the precise clockwork kept the sphere in the exact center of the eyepiece until it dropped beneath the horizon once again.) Obviously, since the sphere violated the proven mathematics of astronomy, it must be a space ship. Equally obviously, it must be preparing to land;

—slowing its forward speed, holding itself away from the atmosphere until its speed had been reduced to practically nothing.

These things must be so, even though there was no tell-tale rocket blast nor other visible indication of the thrust forces being used to effect these ends.

The four hundred inch Orno Observatory telescope brought the ship so close that parts of the sphere could be studied. The spectroscope showed the material of the sphere to be a metallic alloy unknown to science in the year 3947. The eyepiece showed structural regularities such as the rectangular bands about the circumference of the ship.

The two self-luminous areas at what must be the poles of the sphere were unexplainable high temperature areas. They shifted, pointing now forward and to the stern in the line of orbit, now shifting so that one disappeared and the other pointed toward the surface of Mars. When that happened there were magnetic storms on Mars. Not violent, but detectable with nothing more than a compass. The magnetic storms were not accompanied by electric display as those from the sun were.

The mass of the sphere could not be determined. In size, however, it was exactly three thousand feet in diameter.

The sphere had first been sighted two years before. Then it had been just a bright speck of no appreciable size, five degrees ten minutes and twenty-seven seconds under, and fifteen seconds to the west of Sirius.

The four hundred inch telescope had made possible spectroscopic analysis of its light, and the results had created a sensation overnight. Since

then the progress of the "star" had been closely observed. It was not until it passed the orbit of Pluto, however, that it had been brought within range of magnification so that its shape could be determined.

Visitors from the stars! Would they be hostile? No one knew. Both Mars and Venus diverted production to the building of a ring of huge cyclotronic defense batteries about their respective planets.

When the sphere settled in an orbit about Mars the entire power output of the planet went into the huge cyclotrons, and pale beams of incredible power contacted and went into the mystery ship.

The only visible effect had been a measured increase in temperature of the poles of the ship. After ten hours of this pouring of destructive power into the vessel the Martian Government had ordered the cyclotrons shut off pending further deliberation.

No answering message had come from the sphere to the continuous barrage of beamed broadcasts directed at it. So far, it might as well be a robot-controlled ship with no life on board.

This theory became popular and was elaborated upon, until the general public became convinced that the crew of the ship must be in suspended animation. Certainly no creature similar to man could cross the void from a distant star in one life span unless he found some way of suspending animation and stalling off old age.

One writer advanced the theory that perhaps this ship might contain the answer to the mystery of the solar system.

ON two planets, and two only, in all the solar system was there intelligent life; Mars and Venus. Since before the earliest written records

these two races had risen from savagery to civilization, arriving at the same time independently. Both had discovered radio in the same generation and developed it rapidly to the point where they soon were able to contact each other across space.

Then had come the BIG surprise. Their languages had the same root forms. The two supposedly independently evolved races were identical.

As the two planets became rapidly acquainted they received a third great surprise. Each numbered its years according to a custom handed down from pre-history, whose origin was unknown. Only, on Mars it was the year 2748, and on Venus it was the year 4182.

The brilliant Martian mathematician, Hugo Branding, had mixed these up with the length of the Martian and Venusian years and come out with a mystical number, 1954. What this number meant, no one knew. But it pointed to the possibility that 794 Mars years before, or 2,228 Venus years before, whichever way you looked at it, had been the year 1954 on BOTH planets.

That year was lost to the memories of both planets although the mythology of those times, handed down from generation to generation, was similar on both, and spoke of a common origin on some unknown third planet, or at the very least a common origin on one or the other of the two inhabitable planets.

1954 became a mystical number associated with religion. Prophecies were based on manipulation of this magic number—and the prophecies invariably failed.

Then had come rocket flight, possible from Mars but not from Venus. The first Martians had landed on Ve-

nus barely alive. It was then proven that the two races separated by worlds were the same race, and offspring of the men who had lived long enough to get to Venus were still flourishing. They were the "four hundred" of Venus, living on pension and receiving special training each generation.

A second group of volunteers, now knowing their adventure would be suicide, had made it to the Earth, that stormy, radioactive planet, and lived long enough to transmit millions of television images to Venus which was then in the most favorable position for radio communication. They had placed books and newspapers under the television eyes and turned their pages while cameras recorded their contents on far off Venus. Then they had died.

The great immediate discovery from this trip had been that all dated material on the Earth had had the years numbered. The magical 1954 appeared on much of the material, and also the three succeeding numbers, but nothing with a year number greater than 1957 had been transmitted.

The reason for this might be one of many. It could be assumed that the suicide explorers had not had time to finish, and that material of later dates had been ready for transmission when they died from cosmic ray burns. It could also be postulated that the civilization on the Earth had ceased to exist after 1957.

Regardless of that, it seemed conclusive that the mystery of 1954 had been cleared up. The Earth was the parent planet, and in that historic year colonizers had landed on both Mars and Venus. This theory accounted for everything except how

and why the parent race had died so suddenly, and why no more colonizers had come.

SPACE travel had been abandoned after this final success. It had been demonstrated that the deadly rays of interplanetary space were invariably fatal. There was no longer a strong reason for men to sacrifice their lives in such voyages. Television brought both inhabited planets together socially and culturally so that a man on Mars made his friends on Venus and vice versa. And thus matters had stood.

The material from the Earth had been catalogued and studied, and much of it had been transmitted to Mars. Many scientific advances had been made from study of that material. The languages of both planets had been successfully traced in their roots to that of Earth.

But there were no traces of successful interplanetary flight among those records, nor any hint concerning the flight that MUST have been made, that left the first ancestors of the present races on Mars and Venus.

The cataloguing had been according to a subject system, so that in the analyzer all the cards on one subject would be sorted out and the material obtained at once. When this work was finally completed the G-22 V-7 run was blank, indicating no items about colonizing or even landing on Mars and Venus.

That did not mean there absolutely wasn't any mention of such voyages. It merely meant that if there was such mention it had been misclassified by the cataloguers due to its vagueness or apparent meaning. Mastery of the ancient language was growing greater each year, and con-

tinual revision of the master catalogue went on all the time.

AND now, in the Martian year 3947 a strange ship was hovering out in space, getting ready to land. A ship that was a perfect sphere of polished metal three thousand feet in diameter, with no rocket ports of any sort. A ship that had entered the solar system from the direction of Sirius.

Perhaps in it, too, the living had been long ago blasted by space rays, just as the space pioneers from Mars had been. Perhaps it had been traveling for millions of years under robot control until finally it had neared a sizable planet and the robot pilot had set into motion the routine of landing.

But such a theory was self-contradictory because it implied long development of the technique of space flight, and consequently safeguards against space rays. Certainly the ship was immune to the greatest destructive power that the planet could unleash against it. It had also undoubtedly repulsed collisions with asteroids without receiving a scratch that could show in even the four hundred inch Orno Observatory telescope at a distance of a few hundred miles, and at that distance even a scratch would show unmistakably.

The population was very jittery. It had good cause to be. Visible every day was a huge, silent orb, hanging like a threat over all. It hinted at science far beyond anything even the wildest dreamers could imagine, and at a race of Beings from some other part of the universe who KNEW that science. Its very silence, coupled with its mysterious power of movement, seemed nothing but sinister to the

overwrought imaginations of the people of both Mars and Venus.

There was little question that if the ship were inimical it would have to be dealt with by Venus as soon as it finished with Mars. The only advantage the Venusians would have would be a few days in which they knew exactly what they could expect, if that could be called an advantage in a fight against superscience.

Therefore Irwin Crabtree sat in the saddle before the eyepiece of the giant telescope and watched the passage of the sphere across the heavens, determining the elements of its trajectory and relating these elements to the ones derived the day before and the day before that.

The figures checked as he knew they would. The observatory mathematicians had taken the initial trajectory elements of the mysterious ship and from them built up an ideal landing schedule. Day after day the strange ship slowed in accordance with this ideal, proving the intention to land and also the fact that either a living crew or a perfect machine was controlling that sphere.

Today's calculations moved the certainty of the answer three places deeper into the decimal number.

Now Irwin asked the question uppermost in the minds of the people of Mars. He didn't ask it as a question, but stated it as a problem, speaking through the intercom to the mathematicians in their office in the lower part of the observatory.

"DETERMINE," he said, "The latitude and longitude of the point of landing."

At once a voice spoke from the intercom.

"We already have, doctor," it said. "Since you didn't request it we did

not report it, but we have carried the problem out to that point each time to satisfy our own curiosity."

"Then report," Irwin Crabtree said tonelessly, but there was a smile lurking at the corners of his mouth which did not carry into his professional voice.

"We've assumed that a ship of that size would contact the stratosphere directly over the point of landing so as not to travel any further than necessary through the atmosphere. We base that assumption on economy of power consumption and the tremendous size of the ship. Each day the probable area of landing has narrowed down. Now we are certain that the ship intends to land in the valley five miles north of here. Its objective is Orno itself!"

"I rather suspected that all along," Irwin said slowly. "That speaks very well of their motives. They must know an observatory when they see one."

Irwin shut off the intercom. His eyes brooded on the sphere.

For perhaps twenty minutes he remained motionless—almost without breathing. Then reluctantly his hand reached to the instrument board and his finger flicked a switch marked "Venus Central".

Instantly a feminine voice spoke. "We are ready, sir. You have top priority for any message."

"Take a letter," Irwin answered. "It's to Dr. J. R. Boniface, Custodian of the Archives. Dear Dr. Boniface."

"Yes," the feminine voice answered.

"I have reason to suspect the existence of item A437 C665. Please determine if I am right at once and if so transmit item complete without delay."

The operator repeated the message. He O.K.'d it and flicked the switch to the off position.

The sphere disappeared behind the horizon on its circuit around the other side of Mars.

Irwin drummed his fingers slowly on the table of the instrument board, a faraway look in his eyes. After a few moments he climbed out of the saddle and descended to the floor of the observatory room.

His footsteps were slow and uncertain as he crossed the tile floor to the exit. He was getting old. Over fifty Martian years now.

In the hallway outside he took the elevator to a lower floor. When it stopped he slid back the door and crossed the hall to a door marked Dr. I. S. Crabtree, Director.

Almost immediately a messenger boy entered and handed him a packet of photostats. The heading on them was ITEM: Section A437 C665. Heading: Space Ship Nearing Completion. Everett, Wash. AP, March 5, 1953, and then a letter:

CUSTODIAN OF THE ARCHIVES

663 427 5 7th Lane North
53rd sublevel, the Hub
Feb. 14, 3947

VENUS

Dr. I. S. Crabtree
University of Orno
Orno, Mars

Dear Dr. Crabtree:

As per request in yours of February 14, 3947, am sending under separate cover the item on the last projected space flight, derived from the morgue of one of the newspapers of that time and preserved here in our archives.

The item is a series of articles written by a reporter of that era, and

is in our opinion a most comprehensive account of the event from every standpoint. I trust this will fulfill your requirements.

Yours truly,

Dr. J. R. Boniface

ITEM: Section A437 665

Heading:

Space Ship Nearing Completion

Everett, Washington AP

March 5, 1953

Les Turner.

(Ed. introduction) This is the first of a series of articles written especially for the readers of this paper by Les Turner, noted news commentator, on the space ship now under construction on the tide flats at Everett, Washington. As you know, this is perhaps the most vital subject under discussion in the world today. The complete failure of all attempts at space flight to date may culminate with a law prohibiting all attempts at space flight if this present attempt fails. In fact, it was only by the slimmest of margins that Congress allocated funds for the construction of this ship, and it is certain that the billions going into it will be the last ever spent unless this attempt succeeds or unless something new comes to light which will make success more probable.

This series of articles will continue from day to day, refreshing your mind on the history of space flight failures to date, and bringing you an eyewitness account of what is going on at Everett and in what ways the scientists there who are supervising construction think they have licked the bugs which have so far proven 100 per cent fatal.

THE outer skin of the huge globe lying on the tide flats just south of Everett has been complete for several months. Believe me, it is an awe inspiring sight from the air. Exactly three thousand feet in diameter, the huge globe squats like a super dew drop at the edge of the glassy surface of the Sound as the plane from New York circles in the stratosphere for clearance to land at the local airport.

I am dictating this into my portable wire recorder as I look through the porthole of the plane, which is now dropping for a landing.

Three thousand feet in diameter! And it is costing ten million dollars for each one of those three thousand feet. Thirty billions of dollars.

The reasons for the huge size and terrific expense are obvious to those of you who have kept informed on space flight attempts. There have been fifteen attempts to leave the Earth in a ship up to now. The earlier ones were tried with rocket jets. Even when atomic power was used they failed for various reasons. The most important reason for failure was lack of material. Although the source of atomic power was more than plentiful it could only be used on the rocket principle, sending matter out through a tube and using the recoil to drive the ship.

This one is different. One of the things I intend to find out and bring you is the principle they intend to use on this ship. There are no rocket tubes in evidence and it is claimed that none is used. Just how the ship can move is a big mystery.

All of you are acquainted with the many unforeseen things that wrecked previous attempts to cross the void even the short distance to the moon.

You all know that Greg Jones died of cosmic ray burns within fifty minutes after he left the Earth's atmosphere. This had not been foreseen at the time.

It had been known that cosmic ray intensity was such that to cross to the moon and back would almost certainly condemn any man to death within a year after he returned. Jones had accepted this risk for the honor of being the first to do it. The cosmic ray counters on his ship showed several times the predicted concentration of these deadly rays, and one hour and fifteen minutes after Jones took off he collapsed at the microphone on his ship. That was in October, 1949. The ship never returned to Earth so far as we know.

I believe, and I intend to find out for certain whether it is so or not, that the huge size of this ship we are building here at Everett is to provide sufficient protection against the cosmic rays of space. The way I understand it there is a small center section where the crew can remain while the ship is in space and be relatively safe from cosmic rays. That may not be the truth. There are so many stories going around that it is hard for the average man to know which are true and which aren't. That is one of the main things I am going to do in this series of articles; ask the questions the common man is asking, and give you the answers the experts who are actually building this ship give me.

OUR plane is preparing to land now. There are many well known persons on it with me as passengers. The field is the famous McChord field, built during the last war for the army. It's located a few miles south of Everett, just west of Mukil-

teo on Puget Sound. It was at Mukilteo that the army had a munitions loading center during the war, and it was there that the atom bombs from the Hanford plant were loaded aboard ship to be carried to the south Pacific for the atom bomb attack on Japan.

This is a beautiful country around here. Out in the Sound is Whidby Island. Across the sound is the Olympic Mountains, and to the east are the Cascades, so that all the year round there are snow-capped mountains on either side and to the northeast, while the weather remains that of almost perpetual summer.

The last time I was here at this airport was seven years ago in 1946. It wasn't until two years later that the field became a municipal airport serving Seattle and Everett, with its elaborate buildings and hangars to accommodate the huge stratoliners.

The city of Everett has grown rapidly in the past seven years. Then it was a small city whose principle industry was lumber and plywood. With the growing air freight traffic to Alaska and the Orient, and with McChord field already built—larger and better adapted to the changing conditions of transportation; and also the low cost of electric power supplied by Grand Coulee, industry has moved in and skyscrapers have gone up all over the place.

I rode into the city on an airport bus and rented a room at the new Old Sigh Hotel, named after the granddaddy of all mountains which can be seen on clear days across the waters of the Sound at the north end of the Olympic Range.

Now I am in a taxi headed for the space ship yard, my portable recorder safe in my room winding off the

yards of wire, while I use my pocket radio and hand mike to dictate this article.

I remember this part of Everett from seven years ago. The old Everett Pacific Shipyard used to be here. During the last war it turned out drydocks for the navy. That was one of the yards that made possible our huge mobile flotillas which could move around the world independent of any fixed bases.

It jutted southward into the Sound, built up by dumping gravel and clinkers onto the tideflats. Now this whole area has been built up in that way.

Ahead of me, rising far higher than the Empire State building, resting in a huge cradle whose supporting legs are each a thousand foot skyscraper a square block across, is the mirror smooth skin of the ship itself. It is gigantic beyond the imagination. Incredible! The slightest breeze produces a pressure of thousands of tons against it and causes it to vibrate.

The gate is just ahead now. The taxi driver is slowing down. The guards at the gate are soldiers.

Of course it wouldn't be showing, but rumor has it that this place is defended from all directions so that NOTHING could get at this huge ship. The reasons for that are obvious to everyone who reads the paper. Certain countries have protested the building of the ship because it might mean that it would make possible the establishment of V2 bases on the moon. Then the whole world would be vulnerable to rocket bombs.

WELL, I'm here at last. I have to wait at the gait until Lt. Dortmor comes. He's been assigned to take me around the place. The guard is a very nice fellow. What is your

name? Corporal Richard Jeans? Would you like to say something to the public, Dick? Tell them how it feels to be around the greatest project in the history of the world. That's right, just speak like you're talking to me.

"It's quite an experience, sir. You get so that you feel the huge ship is alive. It has its moods that change with the weather. Some days it's restless and some days it's calm and contented. You get so that you find your own mood changes with it. It's so big that it dominates everything."

That's fine, Dick. You know, I think you are cut out to be bigger than a corporal. I doubt if anyone could have put in words quite so well what this huge shining sphere does to a person. At any rate, in a few days the whole country will know that you are a guard here, and read what you just said. Does that make you feel important?

"No, sir."

No? Well, that just shows you don't let a little success or publicity go to your head. You're a great guy, Dick. You're O.K.

"Here comes Lt. Dortmor, sir."

Lt. Dortmor is driving up in a jeep. This yard is as big as a city. It's surfaced with what they call black top out here—a mixture of asphalt and gravel.

Lt. Dortmer? I'm Les Turner of the Associated Press.

"Glad to meet you, Mr. Turner. I received my orders to place myself at your disposal. I understand that you are to have a completely free hand, ask any questions you wish, and go wherever you want, and I am to see that you get to do it."

That's right. Only call me Les. I don't know who you're talking about

when you say Mr. Turner. When people do that I turn around to see who they're talking to.

"All right, Les. And you may as well call me Harvey, to make things equal."

By the way, Harvey, everything you say to me goes through my pocket radio to my recorder at the hotel, and will appear in newspapers all over the country.

"Did you say your recorder is at the hotel, Les?"

Yes. Why?

"Well, this is going to be a big disappointment to you, Les, but most of the places you will want to see are dense to radio. If you expect to record everything you had better send for your recorder."

Oh, oh!

"I have an idea. We can send a man for it. While he is getting it I can show you around some of the places that aren't dense. Just make out an order for him to get it and the hotel will let him into your room."

You're a smart boy, Harvey. I'll do that.

THAT should take care of that for you, sir. Now, I think perhaps you might like to visit our workshops and get some idea of how the prefabrication is done. Too bad you didn't visit us when the shell was being made. It's of a special stainless steel, a high temper spring steel, two inches thick, with all joints welded and X-ray inspected for flaws."

Only two inches thick? Why, I'd supposed it to be several feet thick!

"Oh, no. You see, this is a new type of steel that has the tensile strength of at least two feet of the old types. Actually it is even better than it sounds, because it has a give and elasticity to it. It will stop a meteor

rock striking it at a speed of ten miles a second and throw it back into space.

"One of its best features is that its desirable qualities are not decreased by increase in temperature. This ship could drop in free fall from outside the Earth's atmosphere and hit the ground without harming any of the crew. The skin would heat up to white heat during the fall through the atmosphere, but would not melt nor collapse. When you see the elaborate shock absorber system built between the shell and the core you will understand why the ship could come to a dead stop from a speed of five hundred miles an hour without hurting any of the crew."

That sounds unbelievable! You said something about the core. What is that?

"The core is what you might call a ship within a ship. In size it's about the same as two ocean liners put together. It weighs a hundred thousand tons and is a sphere three hundred feet in diameter, full of compartments for the crew, the instruments, and the stores. It doesn't contain the power plant or the atomic fuel. Those are outside the innermost cosmic ray shield.

"The cosmic ray shields are fundamentally successive laminations of stainless steel and barium compounds and things I don't know about designed for maximum absorption with minimum weight and thickness."

I'm wondering, Harvey. With all these layers of protection how in the devil are the people inside going to see where they're going?

"Oh, that's simple, really, Les. You see, light is reflected by mirrors but cosmic rays aren't. So at every stage of shielding along the axis of the telescopes the shield is cut, with an

under shield a little larger than the cut, and a mirror reflects the light over to one side and another reflects it down toward the core, so that it eventually gets to the eyes of the pilot without any chance of the penetrating cosmic rays following it."

Who invented that? It seems to me that must be one of the greatest single inventions of the century, Harvey.

"Oh, no, Les. It's just a simple thing that had to be solved in the details of planning. There are hundreds of much more ingenious devices in the ship. For example, the shock absorber system that absolutely prevents damage to life and limb is much more worthy of being classed as a great invention."

How does that work?

"The basic idea is fairly simple. It's found, except for the ratchet slide addition to it, in the spring and shock absorber set up on the wheels of an automobile. You'll get a better idea of how it works if I tell you what would take place if this ship were to strike the moon at a speed of five hundred miles per hour and bounce back like a tennis ball on a tennis court.

"We have the core suspended from the shell by a system of these shock absorbers. The shell itself is also a shock absorber. Now, when the outer skin comes to an abrupt halt at the moon's surface the core, or central sphere, still has thirteen hundred and fifty feet to go before it can't go any further. A uniform deceleration of slightly less than six and three tenths gravities brings the central sphere of the ship to a stop in just under four seconds with no bump. That's the best that can be done.

"You can see what it does. A sudden stopping force is applied that would spread a man out flat and crush every cell in his body. The shock absorber system spreads this instantaneous force out uniformly over a period of almost four seconds and makes it just tolerable in a deceleration suit. You know what they are. They were developed during the last war for dive bombers. Essentially they put pressure all over the body so that the blood won't pile up in one part and explode the blood vessels."

WHEW! You know, Harvey, I'm beginning to have a great deal of respect for the human mind when it can figure out things like that. What's this ratchet business?

"The ratchet slides freely while the deceleration is going on. When it stops, the ratchets hook the series of deceleration springs onto the shock absorbers, which let the springs return to their original positions more slowly. In this five hundred mile per hour head on collision I'm talking about the central core would return to the center in about five minutes and be ready for another bounce."

Hmm hmm. I get it.

"One more thing I should mention in connection with that, Les. Such a hit would wreck the power plant and telescope channels, as well as the cosmic ray shielding of the ship. It **WOULD** save the lives of the men, though, and they will have the equipment to repair the damage to the ship if they aren't fried by rays. In actual flight it is very improbable that such a catastrophe will ever occur. The ship will be able to land on the moon or any other body very slowly and without a bump.

"It is only in the event of power failure or unforeseen hits by mete-

ors with masses of two hundred thousand tons or more that such a catastrophe could take place."

Much chance of that?

"Almost none. Meteors that size can be detected by radar in time to avoid. Power failure is something else. I would say that it is the one big question mark to this whole project. Don't ask me about that though. I've been instructed to let Dr. Janes explain that. He's the master mind of the power plant and drive setup. As you know, he invented it."

"Here we are at the entrance to the shops. They occupy the entire circle of buildings that form the cradle for the ship. You can see over to the left where the car tracks go in.

"At the beginning this project absorbed an average of twenty carloads of materials a day. Now it has dwindled to two or three a day.

"In here are the fabricating shops. They occupy strategic locations for a minimum moving of materials and finished parts. You can see from the thickness of the supporting columns here that about half the volume of each building is taken up with supporting columns to hold the ship in its cradle and prevent it from collapsing the buildings. If the ship didn't rest in this cradle the slightest breeze would send it rolling across the country and nothing could stop it."

It would? I thought the ship weighed at least a million tons!

"A million tons! Ha! It only weighs two hundred thousand tons loaded. With its volume it only weighs about twenty-five times as much as the same volume of air, and about a thirty-second as much as the same volume of water! Don't forget, Les, most of the volume of the ship

is nothing but empty space inside that two inch thick shell of stainless steel."

WATCH your eyes, Les. The arc from welding stainless steel is particularly dangerous to the eye. All the metal parts of the ship are of the same stainless steel. The main reason for that is that it is non-magnetic and will last forever.

"Of course, the transformer iron isn't stainless steel, and the conduits are of aluminum. Also there is practically every metal in existence in the various instruments aboard."

Those instruments! I want to find out about them. I've heard that some of them are distinctly new to science, and based on new basics that we didn't know about even a few years ago.

"That's right, Les. They were known as far back as 1947, but they weren't generally accepted as being proven. It was only after we ran into trouble trying to account for some of the things that happened on space ships after they left the atmosphere of the Earth that we were finally forced to consider them seriously. You'll have to be patient on that score. You'll learn about them from the scientists—from Dr. Janes when he explains the drive setup, and from Dr. Tziek when he takes you through the control cabin later on."

WE walked past what are called slabs—flat cast iron grids six inches thick upon which the various metal small parts of the ship were being welded and formed. Men bare to the waist, their skins and clothing grimy with sweat and glistening in the reflected rays of the occasional welding arc worked on without looking up at us.

Overhead cranes whirled past us, swinging heavy metal sheets which swayed dangerously. The workers instinctively dodged them without seeming to look at them. The whine of metal saws at the far end of the shop made talking difficult.

The underside of the space ship could be seen in the distance, two blocks or more away. It seemed almost flat and perhaps it was since it probably flattened a little due to the flexibility of the shell.

It was at this point that a soldier caught up with us, carrying my portable recorder which I had been too lazy to bring with me. Evidently he had been ordered to follow us and carry it for me, because he made no motion to give it to me. I kept my tongue in my cheek and hoped that was the case, because I didn't like the prospect of carrying it myself all over the place.

"Most of the stuff is taken into the ship from underneath, Les. It goes up to the level where it is sent on elevators, then goes to the correct spot on cars. The interior of the ship is a honeycomb of skeleton structure that will have to be torn out when the ship is finished. You won't be able to see too much because of it.

"We'll stop at different levels though and go where we can see the huge shock springs. You'll be amazed at them. It's like looking at an ordinary coil spring through a microscope almost. The wire, if you want to call it that, is ten inches in diameter and the spring coils are twenty feet across. There are sixteen of them radiating out from the core. In operation they all work together in a compression - tension - torsion complex of balance. The shock ab-

sorber and ratchet setup is separate for every fifty feet of spring."

What's that crowd up ahead, Harvey? Looks like somebody is hurt.

"Could be. It happens quite often on a project of this size."

Let's get there. I want to see what happened.

"O.K. I hope you don't emphasize this side of the project in your papers though. It's inevitable, in spite of all safety precautions."

Don't worry. That has been hashed over already enough so that it would be stale reading in my articles.

We hurried forward and pushed through the crowd. Instinctively I pulled back. Then I felt myself turning a distinct shade of green.

It was a particularly nasty accident. A large fabrication had toppled over and caught three men, cutting one completely in two at the waist, a second partly in half so that the upper and lower parts of his torso were held together only on about a third of his right side.

The third man had his left shoulder pinned under a corner of the thing and was conscious. When I got there he was screaming in a heart rending way. Suddenly he stopped that and his features seemed to relax. The next moment he was smiling at someone standing near me, just like nothing was the matter. I thought his mind must have snapped. I mentioned it to Harvey.

"No, Les. I think his screaming was from fear rather than pain. You don't feel any pain from a thing like that. Not for an hour or two afterwards, at least. He just now realized that he is in no more danger and will certainly live. Now he will be all right."

A siren sounded above the shrill of the metal saws and the constant thunder of heavy mauls against metal and the whine of the overhead cranes. It was the ambulance coming as closely to the scene of the accident as it could. So vast was this gigantic workshop that there was a network of streets about a quarter of a block apart.

Above us a traveling crane had come to a stop. Workers were quickly attaching vise clamps to the thing that had done the damage, so as to lift it off the floor.

The man who was only partly cut in half died while I watched him. I'll never forget the play of expression on his face during that last moment of life. At first there was a dumb wonder mixed with voiceless protest and just a little undercurrent of fear.

His eyes were bloodshot. He turned his head so that it took in the crowds of people that had gathered. For an instant I would have sworn his eyes looked directly into mine, then they passed.

Then his head stopped turning. A smile came to his lips. During that moment I felt that I could read his every thought as easily as I am aware of my own. He seemed to be looking over the shop—his place of work. He was glorying in the knowledge that here he was a God, playing his part in the destiny of America, making things that, when all put together, were a space ship that would travel to the moon and to other planets.

He seemed immensely content with the knowledge that he was dying while doing a man's work—a God's work. Space travel has been so common in fiction for so many years and so many people have read so

much of it that we are prone to think of it as an accomplished fact, and belittle the effort being made to bring it about.

Believe me, when I stood there with that huge overhead crane poised above my head, the acres upon acres of work slabs and dirty, hard-working men surrounding me, and the square block or so of the under belly of the huge ship itself showing a couple of hundred feet away over the heads of the men gathered around, the illusion of the commonplace left, and I saw this hive of industry and miracle creation for what it really is: the striving of the human race to fulfill its destiny out in the stars.

I saw the light of life depart from the bloodshot eyes of Grover Rand, for that was the name of that man. At the last it was a light of pride. Pride in the part he had in this gigantic undertaking.

After he died I looked around at the crowd. They were quiet. They had seen what I had seen and been equally aware of those thoughts in that dying man.

I seemed to be seeing them as they really were now. Before, they had been just a sea of dirty, grimy, hard-working men. But now—this one might have been a teller in a bank if he took a bath and put on a white shirt and business suit. That one could very well have been a priest. The one standing on the edge of the nearest slab with a ten pound maul in his right fist might very well have been a surgeon in an operating room with a scalpel held daintily in his skilled fingers.

These were all men—the same as you and I. And those of them who have died, and who may yet die be-

fore that huge ship is ready for the Great Adventure, have given their lives for us just as bravely and just as heroically as any soldier on a Pacific beach ever did.

(Don't miss the second article in this series by Les Turner in tomorrow's paper).

Heading:

Space Ship; (AP) Everett, Wn.

March 6, 1943;

Les Turner.

(This is the second in the series of articles by Les Turner on the space ship now nearing completion at Everett Washington. These articles will appear daily for an indefinite period. Don't miss them!)

I ended yesterday on a sad note, but I did so for a definite purpose. First impressions are often impossible to recapture later on, and as a reporter I wanted to give to you as nearly as possible the same feelings and reactions that I myself experienced.

My first impressions continue. This thing is too BIG to get used to in one visit. There is so much that one's eyes just can't register at all.

Getting back to the sequence of events in my yesterday's visit, after the ambulance had carried away the injured man and his two less fortunate fellow workers, Lt. Harvey Dortmer and I, followed by private Gerald Stone with my portable wire recorder continued on toward the section of the shop directly under the ship.

Here every fifty feet or so was a twenty foot square block of solid concrete which held the underskin of the huge ship off the ground and about twenty feet over our heads.

We were now in the area where finished fabrication were stored,

awaiting their sequence in the business of installation. We walked between rows of thousands upon thousands of strange shapes, each with its number which told the initiate what it was and on what part of the ship it went.

Small mobile hoists, called Cherry Pickers, according to Lt. Dortmer, followed young giants like obedient dogs as they wandered in search of wanted parts. When the parts were located they were lifted and carried to the loading platform that surrounded the bank of huge freight elevators that climbed into the ship itself.

I noticed as we drew near this area that although some of the elevators were loading parts and ascending into the ship, to come back empty, most of them were going up empty and coming back loaded with other metal parts, so that on the whole more seemed to be coming out of the ship than was going into it. I asked Lt. Dortmer about this.

WHY is more going out than in? "About ninety per cent of the ship is completed now, Les. The process of tearing out the skeleton work put in to give the workers platforms upon which to reach their work is going on in those completed sections.

"All this work is planned in sequence and must live up to a schedule. Today is March fifth. On September twentieth, unless some major setback throws the whole thing off, everything will be finished and all the construction equipment will be out."

You mean a job like this, that has never been done before, can be planned like clockwork?

"I wouldn't say it's never been done before. All the tasks HAVE

been done before—is building battleships, bombers, previous space ships, and other things. The time it takes a certain group of workmen to build and install any part of the ship, including time for unforeseen delays, can be figured out according to rules. So much welding will take so long. So much time will be consumed in fitting a part into place. So much time will be consumed and so many delays encountered in getting the part to the spot where it goes."

We entered a small passenger elevator much like those found in office buildings. It was at one end of the bank of freight elevators and much faster.

I was disappointed when we ascended into the interior of the ship. I had expected to see vast stretches of emptiness with a small sphere suspended by giant springs over a thousand feet up.

Instead, I couldn't see over three hundred feet in any direction, because of the working platforms. The elevator climbed five hundred feet and then stopped. We stepped out of it and into a second one which carried us another five hundred feet. A third elevator carried us the rest of the way to the heart of the ship.

There were other elevators that went up further. Here, at the fifteen hundred foot level, we were only half way to the top. It was from this upper section that the skeleton work was being dismantled and taken out.

When we left the elevator we walked along a catwalk with a metal floor and a rail on either side. I stopped and looked over the edge. The distance to the bottom was too great for dizziness. It was like looking at something on the ground from an airplane rather than like looking

over the edge on the roof of a skyscraper.

When we stepped into the central sphere it was exactly like stepping below decks on a navy ship. All metal conventional construction with everything covered by glass wool sheets and painted with a sterile looking white.

We were met at once by what seemed to me to be almost a boy. He was a young man, certainly not over twenty-five. When Lt. Dortmer introduced him as Dr. Tziek I couldn't believe it.

Dr. Tziek? I hope you'll pardon me, but I had expected you to be an old man.

He smiled tolerantly.

"That's quite all right. You'll find that Dr. Janes is no older. I'm twenty-six and he's twenty-eight. He intended to be here to meet you with me, but his presence was needed at the power installations up on top. I know you're more interested in knowing what will run the ship than in the navigation instruments, but if you like I'll show you around in my department while you're waiting for him."

You're wrong about my being more interested in the drive principle. I've been told that the navigation instruments are based on new principles, and that they are the big hope for the success of this ship. My readers are probably more curious about them than anything else.

(During this conversation we were walking, and we now stepped into a room that was figuratively and literally JAMMED with all sorts of installations).

"Most of this stuff is radar, radio, and the operating control for the ship. The real heart of all this equipment

is this circular table in the center. You see three telescope eye pieces that are attached to black box-like things a foot deep, four inches wide, and four feet long.

"Two of these are at right angles to each other horizontally, and the third points downward. Beside each on the table is a keyboard like that on an adding machine.

"These are three ether-drift measuring instruments. Essentially they are blocks of glass with two silvered surfaces twelve inches apart and perfectly parallel. Light from a projected image at one end enters at almost right angles to one of the mirror surfaces. Then it reflects back and forth from one mirror to the other until it gets to the other end, where it focuses on a small screen, thence into a magnifier.

"The slightest ether velocity will shift the position of the screen image as seen in the telescope, and the amount of that shift is the measure of the ether velocity. The three instruments give us the velocity for three directions at right angles to one another, and the data is fed into a central calculating machine which gives out the actual velocity of the ether and the direction it is flowing.

"This is co-ordinated with the same measurements for the weight of a piece of metal and the direction in which the metal is pulled.

"Now, in order for you and your readers to understand what all this means, I want you to consider what Einstein said about acceleration. He said that if a man were in a box out in space away from gravity, and the box were accelerating thirty-two feet per second, although there is no gravity field he would weigh the same as if he were on Earth, and

wouldn't be able to tell the difference.

"That's what happens to the weight. BUT under such a setup there would be no gravity field, and the ether drift instruments wouldn't register, so Einstein was wrong when he said there was no way to distinguish between weight due to gravity and weight due to acceleration. The four instruments at this table do just that, and give the acceleration of the ship relative to the ether, and also the speed of the ship through the ether.

THE speed of the ship THROUGH the ether is the most important fact we must know at all times in space flight. It's the factor that has defeated space travel up to now, because WITHOUT TAKING THAT FACTOR INTO CONSIDERATION THE SPEED AND DIRECTION OF THE SHIP CANNOT BE CONTROLLED."

How does that affect it? Of course I know that ether drift produces gravity attraction. Everybody knows that now, and that the gravity here on Earth that makes me weigh a hundred and eighty-four pounds is due to ether rushing through me at the speed of eighty-eight plus miles per second.

But out in space, how does it affect the course of the ship? The planets drift around in it without any trouble, and the astronomers can predict where they will be for centuries ahead, right to the second.

"Of course. Because they are drifting with the ether, so to speak. The space ship won't be doing that, though. It will be bucking ether currents all the time. If we ran out of fuel we would slow down or speed up until we were just like a bit of bark floating on a stream. Our course

would be quite predictable, but we couldn't control it.

"I'll give you a practical example. Suppose we were in this ship out in space. We come near the Earth and set up what we suppose to be a stable orbit around the Earth, about a thousand miles up. If we travel the same direction as the moon is going the orbit WILL be stable; but if we go in the opposite direction our forward speed will decelerate a few inches each second and we will get closer and closer to the atmosphere, until finally we plunge into it."

You said this group of instruments will give the velocity of the ship relative to the ether?

"Yes, but don't confuse that with absolute motion. The ether itself is always on the move. In the solar system it moves in a pattern much like a whirlpool, in the plane of the ecliptic. The Earth is the center of another such whirlpool, and that whirlpool makes the rotation of the Earth on its axis every day.

"The moon started the Earth's whirlpool in the first place, and keeps it spinning. ONLY PLANETS OR MOONS WITH SIZEABLE SATELLITES ROTATE ON THEIR AXIS, AND ALWAYS IN THE SAME DIRECTION AS THE SATELLITE THAT BEARS A CLOSE RELATIONSHIP TO THE FACTORS OF THE SATELLITES' ORBIT.

"That fact used to be taken to prove that the satellites were thrown off from the central body, but it is now known that the solar system would have about the same configuration it now has if all the individual planets and moons were brought together by chance!

"Even the spiral nebulae prove it. The individual stars in the spiral

nebulae are an average distance of ten light years apart, and there are millions of them in one nebula, yet the overall pattern of the nebula is that of a whirlpool, or vortex. It used to be thought that this was due to the stars condensing from a more or less uniform cloud of gas, and since the gas had a rotary motion, it followed that the condensation would also have the same motion. That theory made it seem that the spiral nebulae were young and temporary, and it postulated the necessity for huge atmospheres of uniformly distributed gas that were fifteen or twenty thousand light years across. Now we know that the spiral nebulae are permanent aggregates, and have been in much their present state for untold billions and trillions of centuries, and that there is no reason why they should ever change much in overall outline."

AT that moment another young man stepped into the control room. He was introduced to me as Dr. Janes. Both he and Dr. Tziek were of medium build, blond, and had a scholarly appearance. They reminded me more of college students than scientists. Although I had seen pictures of them before it was somewhat of a shock to an old man of forty to realize that the greatest show on Earth was being masterminded by two kids under thirty.

However I didn't waste time on personalities right then. The secret of how this ship was going to be driven was what I wanted most, and I went right to the point.

I have a portable recorder with me, Doctor Jane. The world is waiting with its tongue hanging out for information on how this ship is to run with no rocket jets. Suppose you

start explaining to me now, and we can continue on that while you show me around the power setup.

"That sounds all right to me, Mr. Turner—er, Les. To begin with, we'll have to go back to the nature of the electron and the proton. Also the neutron and other basic particles. We'll stick to the electron and the proton for simplicity.

"It used to be thought that the electron, for example, had two things; (1) an electric charge, and (2) a gravitational mass. The electric charge was supposed to give rise to the electric field, and the mass evidenced itself as inertia when the electron was in motion, and as a gravity field at all times. The same went for the proton except that the mass and gravity field about the proton were over a thousand times that of the electron.

"We now know that the proton is a very complex unit instead of the simple thing we used to think it was. We also know that a gravitational field is a neutralized electrical field, and that inertial mass is only indirectly related to strength of field. It's all rather complex unless you sit down and learn the basics step by step.

"What I've been leading up to is simply this: inertial mass is of two kinds just as electric charge is of two kinds—positive and negative. In nature things are so much in balance that the forces we deal with are always residues. For example, a ton of lead is thought to have a ton of inertial mass. Actually it has several tons of one kind of inertial mass and one ton more or less than that of the other kind, so that the residue after most of the actual mass has cancelled out is a ton.

"In the same way the gravity field strength of a ton of lead is almost too weak for any possible measurement, yet it is a **neutralization** of two equal electrical fields whose individual strengths if separated would rival the attraction of the sun in pulling power!

"Getting back to this idea of two kinds of inertial mass, let's picture two different bullets made of pure inertial mass, each of one kind. The recoil of the gun when one is fired would be in the direction opposite to that of the flight of the bullet, while for the other it would be in the direction the bullet went.

"We use this principle to drive the ship. Instead of shooting matter out of a tube and using the recoil to drive the ship forward we use electricity and shoot the protons out of the bottom of the ship and the electrons out of the top, all at the same time. That way we use nearly the full inertial mass to drive the ship instead of a residue.

"We don't have to carry a supply of matter to use up in this way, either. That's where the real value of the tremendous area of the outer shell comes in. In flight through space this area collects the electrons and positrons and protons from the space we pass through!

OUR power plant draws them in and separates them, driving the positive electricity sternward and the negative electricity forward. It shoots them away from the ship at speeds that are nearly a third of the speed of light—far greater than rocket gasses could attain!

"Now I'm going to let you in on a little secret, Les. You and the public. It takes very little power to do all this. The maximum that our power

plant can develop is fifteen thousand horsepower. That's less than that developed by the power plant of a large bomber, and it is more than twice enough to lift us away from the Earth.

"We get our energy from an atomic pile. It could go on generating that maximum power continuously for several thousand years, so this ship could hop from one planet to another, leave the solar system behind and go to the nearest stars and come back again, and never need refueling until this age we live in has become a small part of ancient history or even of pre-history, if some cataclysm were to destroy written records."

* * *

Irwin Crabtree laid the report down at this point and flicked the switch to Venus Central on his desk.

"To Dr. J. R. Boniface, Custodian of the Archives. Dear Dr. Boniface: Some of the contents of the material seem not only significant to my study, but also point to the existence of certain other items. These would be Q559 G432 and Q559 G447. Please rush this. Yours truly, Dr. I. S. Crabtree."

After the operator repeated the message he broke the connection. For nearly an hour he remained motionless except for the occasional drumming of his fingers on the desk. He ignored the rest of the report on the desk before him.

There was a discreet knock at the door. A messenger came in with several photostat sheets. Irwin took them and glanced hastily through them. Then he grunted with satisfaction and started to read them carefully.

The first one was headed Item: Section Q559 G432. It read:

U.N. Capitol, New York:—A bill was introduced in the assembly this morning by Soviet Minister Dashski designed to prohibit the annexation of soil on the moon or any other planet by any nation by right of discovery, and to impose immediate penalties of a drastic nature on any nation that attempted to set up rocket installations on the moon.

This was obviously aimed at crippling the present plans of the United States which hinge on the success of the ship which is ready for departure on its maiden voyage to the Moon.

The United States promptly vetoed the introduction of the bill. When the Soviet Minister heard this veto he rose and shouted that if the United States did not rescind its veto and permit discussion of the bill his country would be compelled to consider the United Nations an ineffective instrument and withdraw.

The U.S. Minister promptly reminded the Soviet Minister that he was out of order, and that the precedent for veto had been well established by the Soviet representatives. If they now withdrew when it was used against them it would have to be construed by the United States as a declaration of war by the Soviet against the United Nations and the United States.

The Soviet Minister retorted that the veto of the United States on this matter could be construed in no other way by his country than a declaration of hostile intent and that he was instructed by his government in the case of a veto by the United States to make a statement. He then read from a prepared statement, "In the event of a veto by the United States on this bill the Union of Soviet So-

cialist Republics must consider such veto as tantamount to a direct declaration of hostilities by that government, and will henceforth act accordingly."

Then, white of face and in a strained voice, the Soviet Minister added, "This is the unalterable position of my government. The next move is up to the United States Minister."

Thereupon the United States Minister rose and stated that he would have to confer with his government on the matter, and asked for a recess until tomorrow when he would either reaffirm his veto or withdraw it, according to whatever instructions he received.

IRWIN turned to the next sheet and frowned when he saw it was headed 447. That meant that there was no record of the next day's session of the U.N. Council. Still frowning, he read on.

Section Q559 G447: BOOK OF THE WEEK. (A weekly review of an outstanding book by Giles Rupert, noted author and critic, written especially for this paper). The book, *Suspended Animation*, by Dr. G. W. Hines, physiologist at the Mayo clinic, is destined to become a best seller. Four hundred pages long, it deals with every phase of the problem from types of suspended animation found in nature to laboratory successes in this subject with human guinea pigs. It attempts to get at the explanations as well as the techniques, and even draws on legend and history for possible incidents, advancing logical theories to account for these ancient tales.

The book is divided into three parts. In the first, hibernation is dealt with, together with well authenti-

cated cases where cold blooded animals have been sealed up for decades without dying. In the second section sleeping sicknesses and artificially induced hibernation of warm blooded animals is discussed.

The last section of the book is most fascinating. General theories about sleep and unconsciousness, and also about suspended bodily function, are built into a gripping whole. Tales of vampires from the middle ages are discussed in the light of present findings. Problems to be overcome before successful suspended animation can become a fact are outlined and possible laboratory procedure is given.

Were vampires really dead, or in suspended animation? Could there be a physiological explanation that might give credence to the very elaborate tales concerning human vampires that flourished in Europe and elsewhere three to five centuries ago? The discussion of this problem in the book will grip the reader far more than the most hair raising of fiction stories ever could.

If you want a book that you can't lay down, this is it.

THERE were over thirty items in this classification. None of the others seemed of any value. The book had not been sent to Venus through the television broadcasts from the Earth expedition.

Irwin glanced at his watch. Time to get back to the telescope again. With Mars rotating in one direction and the sphere moving in the other it didn't take long for it to circle the planet relative to one spot.

He laid the papers in a neat pile on one side of his desk and left the room, retracing his steps to the observatory proper. An assistant had

already turned the huge frame so that it pointed toward the spot on the horizon where the sphere was expected to reappear.

At the precise second calculated, it jumped into sight. It climbed into the sky rapidly at first. Then a change took place. The one pole visible in the telescope grew almost incandescent. The sphere disappeared and Irwin had to disconnect the clock drive and wait a few seconds, then operate the drive by push button control to keep it in view.

Unbelievable deceleration was taking place in that ship. Three hours later it settled into the first layers of atmosphere. After that it grew in the telescope until even a small insect could have been brought into focus on its surface.

There was no need to flash the alarm. The sounds of people shouting could be heard all over the city of Orno.

The unsuspected power of the mystery ship had upset the calculations of the observatory mathematicians, but their prediction of the spot where the ship would land was correct.

Irwin Crabtree called the local police and issued terse orders. He had prepared for this moment days before and received emergency power over all local government on his insistence that it might mean the difference between survival and extinction.

It took him five minutes of precious time to reach the exit to the observatory building. By then a police car was waiting for him. He climbed in and the machine picked up speed rapidly, its exhaust whistle shrilling loudly.

Cars pulled over along the way in response to the police whistle hooked into the exhaust so that it took very little time to reach the valley where the huge sphere was now settling.

Other police cars were scurrying around and stopping at strategic positions where they could prevent the crowd that was beginning to collect from going down into the valley and approaching the ship.

Dr. Crabtree's eyes were feverish with excitement. Was this the same ship that had left the Earth so long ago? He felt it must be. Had the original crew managed to remain alive in suspended animation all this time? He felt that that must be impossible; but, perhaps the present crew were descendants of the original crew, just as he was certain the people of Mars and Venus were the descendants of the original passengers this same ship had left on the two planets.

In a little while he should know. With hands that shook he unfurled a white flag he had ordered for the car. He hung this out the side window so it could be seen plainly from the ship, and ordered the driver to approach the ship slowly.

The car crept down the switch-back road into the valley. Twenty minutes later it stopped just even with the outer bulge of the fantastic sphere.

HE opened the car door to climb out onto the ground. A strange freak of circumstance saved his life. The car had stopped near a mound of dirt. As the car door swung open it came to within an inch of this mound. There was a blinding flash of electricity as the charge that had

accumulated in the car body discharged into the soil.

"Of course!" Irwin Crabtree exclaimed as the explanation for this flashed into his mind. He hesitated, wondering if any charge remained. Then he remembered his electronics and stepped boldly onto the ground with the white flag firmly held erect in front of him.

The electric flash had been due to the accumulation in the tire-insulated car body of positrons and protons shot out of the ship to cushion its fall. Those that had struck the soil had immediately attracted electrons from all over so that the earth charge had become neutral. Those that had struck the car had been held like a charge on a condenser plate until the car door had formed a small enough gap for the charge to escape.

Conscious of the thousands of eyes that were watching him from the surrounding hills, Dr. Crabtree slowly approached the ship over the uneven ground.

The air was highly charged, and a faint ozone smell coupled with a strange odor of burnt metal accentuated the feeling of alienness about the ship. Its size defied the senses. There was no faintest sound from the gigantic globe, yet it had an aura of titanic, living strength.

Irwin Crabtree looked up at the smooth surface that bulged outward and into the sky above, and thought, "That surface has been exposed for thousands of years to the cold and sterile vacuum of interstellar space and is as perfect as the day it first received its finishing polish. What a perfect, indestructible metal it must be!"

Immediately ahead of him a circular opening appeared and a rope

ladder dropped out with an unrolling motion, to touch the ground with a yard to spare.

Irwin stood still, the stick of his white flag digging into his trousers belt as he held the flag upright. Behind him he could hear the television truck maneuvering for position so that it could bring to two worlds the first sight of these beings from some other star. The public did not yet know of Irwin's suspicions that this ship had originally come from Earth.

Fifteen minutes went by. Then a half hour. Still no movement came from the round opening in the bottom of the ship.

A messenger came up behind him and handed him a note. It was from the Mayor of Orno suggesting that two policemen be sent up the ladder. He had two volunteers. After some hesitation Irwin wrote a simple "Very well" on the back of the note and handed it back to the messenger.

A moment or two later two young men in the universal bright red of the constabulary of Mars approached Irwin, clicked their heels smartly, and saluted.

He returned the salute and outlined his plan.

"I have a pretty good idea of what we will find in there," he said. "For several reasons I feel it would be better if I went with you. One of you will precede me up the ladder and the other will follow me and give me any assistance I may need."

"Very well, sir," one of them said, acting as spokesman for the both of them.

The three advanced to the foot of the dangling rope ladder. Without hesitation one of the bright red figures rapidly scaled the ladder. Then

Dr. Crabtree followed, more slowly, while the third figure kept the ladder from swaying. When the aged astronomer had disappeared through the opening into the ship, he followed.

After the three disappeared from sight through the dark opening the gathering thousands of people settled down to wait.

The television truck had brought the whole thing to the populations of both Mars and Venus far more clearly than those on the surrounding hills could see it. But now, as time passed, those on the scene began to experience the strange, subduing, alien interstellarness of the ship—its air of cauterized, infinite power, and contempt of attack.

The sun dipped below the horizon. Still the throngs waited, and still the three men did not return. But with darkness a dim glow could be seen emerging through the opening in the ship.

PART II

IRWIN Crabtree stepped off the rope ladder onto a small platform inside the huge sphere. His darting eyes took in the immensity of space above him and the details of the ship as revealed by a uniform dim glow that pervaded the very atmosphere, as it seemed.

Fifteen hundred feet above was a smaller sphere. It looked like the bloated belly of a huge spider sitting in the center of its web, with the huge coil springs radiating out from it in all directions to the outer shell.

Beside the platform upon which he stood was a large elevator. A fragile, quarter-inch strand of woven metal went up from its roof to become a faint line that disappeared

within a hundred yards because of smallness and lack of lustre.

Evidently they were expected to travel in this elevator into the upper sections of the sphere.

Curious as to how the elevator was designed, Irwin stepped into it. A pipe ran from the roof to the floor in the exact center of the elevator. Obviously the thin strand of wire rope up which the elevator was to ride must pass through this pipe and be anchored to the shell of the sphere. In some way the elevator gained traction as well as support from that single strand.

He motioned for the two police to follow him. The instant all three were safely in the door closed and the elevator started to rise. Was this due to automatic mechanism built into the elevator? Or did some person or being above start it as soon as he saw they were in? Why had they not been met?

Irwin shoved these questions into the back of his mind. They would be answered eventually, and speculation about them now was fruitless.

The elevator rose steadily with a faint hum coming from the center pipe. The flatness of the shell below rapidly assumed a concave appearance, and the ship core gradually lost its appearance of being a living thing crouching in a web far above, and began to look like what it was—the actual space ship, of which the three thousand foot outer sphere was just a protective shield and gatherer of cosmic particles for fuel for the propulsion mechanism.

The elevator was slow. After the first few minutes the novelty of the thing wore off. The two policemen introduced themselves. They were George Hanson and Fred Brown.

"If you will pardon me for saying so, sir," George said respectfully after their introductions, "I've noticed that you seem to know more about this ship than if you had never heard of it before."

"That's right," Irwin said. "There's an account of a ship just like this being built on the Earth. I got the account just today from the Archives. Either this is the same ship, or else there is only one way to build a successful space ship, so that anyone who went from some other solar system to this one would have to build one like it to succeed. I don't know which is the case, but we should find out soon. I imagine the captain of this ship is waiting up there impatiently for the elevator to reach its destination."

"I hope they're friendly," Fred Brown said fervently.

"There's no reason why they shouldn't be," Irwin assured him. "After all, beings intelligent enough to build a ship like this aren't out for savage, senseless killing. They probably haven't shown themselves because it would be much more probable that WE are the savage creatures, and they wouldn't want to trust themselves to our mercy until they have seen a sample of what we are."

"That must be it," Fred said, reassured.

The central sphere was now beginning to show its size. The elevator had swung over and was rising directly underneath it. The thin strand of cable could be traced into an opening in the bottom now.

The small opening far below in the outer shell, through which the three men had entered the ship, had become no more than a pin point of light.

There were noises—the hum of the elevator mechanism, a quiet high speed hum, and the voices of the men when they spoke. The steady noises had a non-directional quality to them that made them seem a part of the atmosphere rather than sounds. The voices had a strange way of repeating themselves quite distinctly and loudly. All this strangeness of sound was due to its being confined inside a huge shell which reflected it back.

THE elevator roof reached the opening into the central sphere and stopped. Next it rotated about its supporting cable until two grooves on opposite sides of the elevator were in line with two guide rails in the shaft. After that it rose again, the grooves of the elevator slipping over the guide rails with a slight settling bounce.

The vastness of the outer sphere was immediately replaced by the close normalcy of a conventional elevator.

A door dropped slowly past the rising car. There were transparent windows in it that revealed a long corridor. The view slipped below the car floor. Twenty more such scenes slipped slowly by to tantalize the whetted curiosity of the three men before the car finally stopped.

This time the door in the shaft slid open invitingly. The three men stepped out into a large room. Facing them about twenty feet away were a dozen young men, a friendly smile on their faces, but a wary look in their eyes as if they were ready for a first hostile act from the visitors.

Dr. Crabtree took in all this and said quietly to the two policemen, "Don't do anything unless I tell you to."

Then he stepped forward, his white flag held at his side and a disarming smile on his lips.

He spoke in the ancient root language of Mars and Venus.

"Welcome to Mars," he said simply. "I am Dr. Irwin Crabtree of the astronomical observatory here at Orno."

The strange ship dwellers looked at one another, pleased surprise on their faces. Then on advanced with hand outstretched.

"This IS a surprise," he said, pumping Irwin's hand enthusiastically. "Then the colony our ancestors left on Mars took root. Since you speak English with only a slight distortion of pronunciation it must be that the ancient knowledge was not lost in your climb through the centuries."

"It was largely lost," Irwin said sadly. "But we gained it back again. The colony on Venus has done just as well. We are in constant communication by radio, although we don't have space flight."

The other star travellers were lining up to shake hands with the three Martians. They obviously considered this in the nature of a homecoming.

THEY were surprised to find the two red clad policemen couldn't understand their speech. Irwin explained that modern Martian was quite a bit different than the ancient root tongue, and that he had learned English from the old writings, giving it the modern Martian pronunciation because he knew no other.

"Aren't there more or you than this? Irwin finally asked.

"Oh, yes," one of the twelve men replied. "We number fifteen thousand. We here are what you might

call a suicide squad. The rest are watching this room through the inter-communication system, but this room is sealed. It's necessary to find out several things before we can mix freely. The state of civilization you have is one thing. We want to know whether we are going to have to be careful lest some ambitious Martian tries to steal the ship and become ruler of everything he can lay his hands on. The most vital thing we must find out, though, is whether we are carriers of any disease that might be harmful if released on Mars and whether you have acquired new diseases that might kill off all of us before we could stop it."

"Hmm," Erwin said thoughtfully. "So that is the two reasons you didn't communicate with us or come out to meet us. It might very well have been the end of you. Did you know that when you first started circling the planet we tried to destroy you because you wouldn't give us any kind of reply to our broadcasts hurled at you?"

"Oh, that!" The man laughed indulgently. "Planetlubbers — that's what we call people who have never been away from a planet, have exaggerated ideas of the strength of the forces they command. Don't get me wrong, though. We know how destructive the cyclotron beam can be. But our ship uses such things for fuel and your attack was to our ship what an extra helping of food at a meal would be to your body. We ignored it."

"Is this the ship that was built on the Earth in 1953?" Irwin asked suddenly.

"The same one," the man replied. "When it dropped off colonizers on Venus and Mars the original crew of

men and women decided to explore the rest of the solar system. After a few years of that they left for the region of Sirius, the dog star. Our power plant was good for several thousands of years. It would be at least two thousand years before Earth became habitable again; the colonies were doing all right and would eventually cover both Mars and Venus, but in that long struggle ahead there would undoubtedly be a recapitulation of Earth history; and they had the ship with which to reach the stars. So they left it all behind—to hatch, you might say. Now we have returned to see what kind of chicks resulted."

"But what happened on Earth?" Irwin asked. "What took place that made the home planet uninhabitable?"

"It's along story," the man answered. "We are going to have a little celebration dinner in honor of you, our first guests since our return home. After that you'll get the story. By the way, Dr. Crabtree, my name is Jack Janes."

"Janes!" exclaimed Irwin. "Then you are a direct descendant of the man who invented the power drive on this ship!"

"Of course!" Jack said. "We all are. In the course of several hundred generations starting with a hundred couples it is inevitable that everyone is a direct descendant of all those of the first generation."

"Of course," Irwin chuckled. "I hadn't thought of that."

"We have had to enforce strict marriage rules here that would never be necessary on a planet," Jack went on. "First of all was birth control because the population had no room for expansion. Next came systematic

laws on what we called the principle of remotest relation. It's more complex than you would think. It was necessary to prevent inbreeding and the consequent weakening of the stock.'

"I am not too well acquainted with genetics," Irwin said, "but I get what you mean. I gather the young man was told that he had five or six eligible girls to choose from and no more?"

"That's right," Jack said. "Sometimes it is only one. No choice. But here comes the food."

A door had opened revealing another large room in which a long table was set. The twelve men and their three Martian guests took their seats.

The two policemen, George and Fred, had been rapidly catching onto the ancient language that was so much like their own. Also they had been getting acquainted with the other men and finding them very much to their liking.

The meal began with three capsules and a glass of a sparkling beverage of strange flavor.

Jack began the meal by picking up the capsules on his plate and holding them up.

"These are vitamins," he explained. "Do you know what they are, "Oh, yes," Irwin replied. "We discovered vitamins several centuries ago. But we call them controls."

"Well, we'll get you on the food," Jack said good naturedly. "I'll bet you've never heard of half the vegetables on this table, have you?"

Irwin looked over the collection of food-stuffs. There wasn't a single familiar vegetable.

"You have the advantage of me now," he said with a twinkle.

"I should," Jack said. "You see, we have little original work we can do except create new varieties of plants, and that has been one of our main interests for generations. The names and parentage of them won't mean much to you. Eat them and see how they taste. There'll be plenty of time from now on to learn what they are."

An hour later the fifteen men sat back and prepared to listen to Jack tell the story of the end of life on Earth, and how his ancestors had rescued a remnant of humanity and planted it on Mars and Venus.

To Jack and his eleven companions of the "suicide" squad it was an old story learned during their early childhood. To George Hanson and Fred Brown, the two red clad policemen it was a partly understood tale in a curious distortion of their own language. But to Irwin it was the final answer to the enigma that had puzzled two worlds for centuries. He listened breathlessly.

"In 1945," Jack began, "the first atom bomb was used to end a world war. In all, in 1945 and 1947 there were five such bombs exploded. The men who created these bombs did not concern themselves with the possible after-effects. They merely made the bomb work successfully. They had a naive confidence in the goodness of nature. They did not realize that chain effects belong to a family of phenomena akin to life. Millions of years before that time a certain molecule had come into existence by chance in the hot gases of the cooling Earth. It was the first molecule on Earth possessing the peculiar property of reproducing itself. The RP property, it is called.

"That molecule had perhaps one chance in ten billion of reproducing rather than being destroyed in a chemical action with its environment. Perhaps ten billion had already been created and destroyed before this one succeeded. It DID reproduce itself, again and again. Up to a certain point in numbers of descendants of this first successful life form the chances of its continuance were slim. On Mars and Venus and perhaps other members of the solar system this same thing took place. The planets were cooling, and before long the conditions necessary for the spontaneous creation of this first life form would be gone. It was nip and tuck, with the odds about ten to one against its success, but it did succeed, and life established itself on the Earth.

"Eventually there were thousands of billions of these first living molecules. Thousands of them were being destroyed by environment every minute, and more thousands were coming into existence from the ones that weren't destroyed, until the odds against survival disappeared entirely.

"Now, sometimes environment in destroying one of these molecules produced what is known as a mutation. In other words, a living molecule that couldn't have been created spontaneously, and a little more complex than the first form. Perhaps there were only one or two possible mutations to the first form. However many there were, eventually all of them came into existence.

AS the Earth cooled and environment changed and all the possible mutations on the first life forms came into existence, these in turn took all the possibilities opened up to them in mutation.

"The failures—the unsuccessful mutations, were destroyed by environment. The successes spread out mutationally in all directions, being pruned back and directed by environment just as the banks of a stream on a planet direct that stream to the ocean. Step by step life became more complex, less complex, more stable, and less stable, going upward and downward in the scale of evolution and also standing still, so that in 1945 when the atom bomb was first used the original molecular chain reaction had produced man and his intelligent brain. That, from a beginning as a simple molecule in a chemical reaction.

"The reason I'm telling you all this is to show you what consequences can come from such simple beginnings. If there had been entities on the Earth in that beginning of life to whom life would be fatal, and if that first molecule with the RP property had been produced by one of those entities, he would have had to be almost infinitely wise to foresee the ultimate consequences of his scientific work. He wouldn't have foreseen, of course. The consequences were too subtle, only becoming obvious after millions of years and through millions of imperceptible developments.

"The chain reaction in the atomic pile is an RP action. One neutron hits a heavy atom and results in more than one neutron. The reproduction of free neutrons is the chain reaction, analogous to life, and is the principle of the atom bomb.

"These free neutrons by the billions were let loose in the atmosphere with each explosion, and in the atmosphere they encountered a new environment. No mutation was possible, since a neutron is a neutron

always, unless it is safely captured by the nucleus of an atom that remains stable with its acquisition. These "deaths" of the neutrons were more than outnumbered by the reproduction of a neutron by collision with some gas atom that split and let loose two or more neutrons.

"The increase was slow. After 1947 it was beyond recall, but it wouldn't become obvious for two or three more centuries, just as the results from the creation of the first life form—a simple molecule able to reproduce itself, could not have been seen on the Earth to any great extent until millions of years later.

"But with the war over and peace talks going on indefinitely, one of the scientists sat back and did a little thinking and got the right answer. He immediately went to the President and in the course of events it was proven he was right.

"If he had been wrong — IF SUCH A CHAIN REACTION IN THE ATMOSPHERE HAD NOT BEEN A REALITY BUT MERELY A FICTION, perhaps the history of atomic explosives would have taken the same course as the history of dynamite and become just one of the stock weapons of nations in their perpetual battles.

"As it was the government had two courses it could follow. It could carve out safe places under the surface where a large part of the people could go. And/or it could try to build successful space ships and go to other planets.

"It attempted both courses. The move into the underground was kept secret but the space ship couldn't be secret. After many failures this ship was built. The first ships had used the rocket principle, and their only

value had been to prove the inadequacy of the basics of science and compel their revision.

"This ship made its maiden voyage to the moon and returned successfully. But while it was gone other nations had decided that the United States must be destroyed before she built rocket bomb stations on the moon that could dominate the entire Earth.

"They didn't have atom bombs, but they DID have radioactives, and they spread them by the ton all over the United States from rockets in the stratosphere. It was a stupid, psychological attack from start to finish. The radioactives were merely ordinary Uranium which is relatively safe. The scientists of the United States shouted this at the top of their lungs and no one believed them.

AN all out war was inevitable and everyone knew it. This ship was not designed for fighting. The government, fearing the end of civilization was certain, ordered the crew to take on board all the people, books, and equipment that could be carried, and take them to Mars, Venus, and any other place where there might be a chance for survival.

"Then the government made its fatal error. Having on hand over fifty atom bombs, it decided that the war could be ended quickly by destroying the governments of the attackers and dealing with the populations when they were disorganized. They reasoned idealistically that the people didn't want war and that the people loved the United States. The People were the downtrodden masses who were the victims of totalitarianism. They really wanted Democracy if they had a chance to get it.

"Perhaps there were quite a few people in other countries that were like that, but it takes more than quite a few. It takes ninety-nine per cent."

"Anyway, to get back to what happened, this ship left for Venus the same day that Operation Terminal, as it was named, went into operation."

"Our ancestors, yours and mine together, looked back and saw the flashes from those atom bombs. The ship stayed at Venus for six months while the Venusian settlers were getting established. Then it cut across to Mars and stayed there for another six months."

"Then they decided to explore the moons of Jupiter for possible inhabitable ones. Exploration continued until every body in the solar system had been visited. That period is a story in itself, and we have it all in our library."

"Finally our ancestors returned to the Earth. They never were able to find out exactly what had happened there. Civilization was gone and the atmosphere was getting dangerously radioactive. The people in all countries including the United States had degenerated into small colonies and bands of wandering marauders, each a law unto itself. Their eventual end was certain. Extinction."

"Whether the move into the underground had succeeded or not could not be determined. There was nothing to do but leave before radioactive poisons contaminated their bodies."

"Our ancestors went back to Venus. There we found that the original colony had split up into three groups under three different leaders and gone their separate ways. The future there would repeat the history of the Earth. There would be wars and pil-

lage when the populations grew larger."

"On Mars it was the same. The human race was at low ebb, and true civilization remained only in a sphere three thousand feet in diameter."

"It was then the decision to go to Sirius was made. It was fairly certain there were many planets around that star. Also the dense star was a mystery that intrigued them."

"Three years later the ship passed Pluto and began its journey through the void. Only it wasn't so void after all."

Jack stopped talking and looked at his companions with a humorous smile on his face.

"What do you mean it wasn't so void?" Irwin asked.

"Have your psychologists on Venus and Mars solved the principle of the operation of the human brain?" Jack asked.

"Why, I don't believe so," Irwin replied. "Why?"

"They undoubtedly have dissected the brain and also discovered the encephalograph, at least," Jack persisted. "You can't possibly have attained interplanetary television without having someone discover that the brain gives off radio waves capable of influencing a sensitive electronic device placed near the brain."

"Oh, yes," Irwin said. "We have that all right. We know that the brain is a maze of nerve tubes that connect at small nodes, and these nerves originate at certain cells in the cortex. Undoubtedly there have been attempts to figure out what goes on physically in the brain during thinking, but I am not too much up on that."

“TOO bad,” Jack said regretfully. “But maybe I can get across what I want to say about the brain before going into the subject of interstellar space in a way you can understand.

“The nodes and the connecting nerves of the brain are the memory circuit. The nodes may be likened to small check valves that are stuck closed. A certain amount of fluid pressure breaks them open, and after that they stay open or they close, but will open under the least pressure. In that way the cells in the cortex establish sequences and direct connections with one another.

“This is the automatic mechanism of the brain and comprises sense impressions and the vast sea of the subconscious. It’s the vast keyboard and organ of the conscious mind, and is able to operate successfully WITH-OUT a conscious mind. In the same way the conscious mind is able to operate WITHOUT THIS BRAIN MECHANISM.

“In this ship, generation after generation, as we have traveled through space, we have definitely proven all that I am telling you. For example, we have proven that certain drugs make the brain completely inoperative temporarily. If thought is the product of the brain alone, then under these drugs there would be no thought and certainly no awareness through the senses.

“Yet the conscious mind, although divorced absolutely from all sense awareness, develops the ability to be aware of things that take place during that period of complete paralysis of the brain function. This has been proven.

“Also it has been proven that the brain can operate successfully with-

out the knowledge of the conscious mind. By hypnosis the conscious mind has been divorced from the brain and exhaustive psychological tests have been made. These have shown the nature of the relation between the function of the brain and the function of the conscious mind.

“These tests have been very exhaustive and have been done so much that error is out of the question. They have proven that the seat of the conscious mind is not in the brain proper, and is not affected by drugs in any way.

“It has been amply demonstrated that the conscious mind can even leave the body entirely for long periods and then return.

“From there on we have mainly theory and necessary conclusion, but no objective proof. But it seems quite certain that the conscious mind and the seat of reasoning, imagination, and a large part of memory itself with emphasis on generalizations and principles, resides in some very small unit which may be a single molecule or even something smaller. Whatever it is, it is unique in nature. Whatever its origin, it seems to be indestructible.

“In interstellar space there are vast swarms of these units, and without exception they all claim to have originated on various planets in some form or other of living organism. Some of them are millions of years old. Others are very young, relatively speaking.

“Together, they comprise a vast civilization of thousands of billions of individual thinking entities! Interstellar space is divided up into districts and regions by them, and they have little concern for solar systems,

steering clear of them almost entirely.

"That is what my ancestors found when they left the solar system! Does it sound believable, doctor?"

"I believe anything you tell me," Irwin said seriously. "Still, it is almost beyond belief. The nature of the proofs you have outlined seem to be of a kind that our own scientists could duplicate though. And I'm sure that if you advance your own data they can verify it and support at least the possibility of what you say. It sounds interesting. Your ancestors left a dying civilization and plunged right into the midst of a vast interstellar one far older than the Earth. Is that right?"

"Correct," Jack said. "Oh, it took them over a century to be sure it wasn't space madness and delusion. Eventually they completed the proof of its reality. From then on life on the ship was a great adventure. More than an adventure, really, because **OUR ANCESTORS ARE STILL WITH US.** Yes. Those original pioneers that left the Earth and left your ancestors here on Mars to go out into the interstellar spaces in the hope that their descendants would reach another star **REACHED THAT STAR THEMSELVES, AND HAVE RETURNED.**

"What!" Irwin said, sitting up suddenly. "Do you mean they are still alive and on this ship?"

"Not still alive," Jack said, laughing. "But the vehicle that holds the seat of consciousness is still in existence, and is on this ship."

"That sounds to me like ancestor worship," Irwin said, not sure now whether he was being kidded or whether Jack sincerely believed all this.

"Not worship," Jack corrected. "Reverence, yes. Respect too. The same kind of respect I hold for you. But demonstrable fact is not religion."

"You mean I could talk to those ancestors of yours?" Irwin asked.

"I don't know," Jack said doubtfully. "You see, doctor, talking with a spirit is quite a bit different than talking with a language. It takes a natural aptitude and long training to do it. In a way it's a different language entirely through a different sense.

"I'll give you an analogy that will show you the difference. In television the image that goes into the television eye sets up a complicated electric current. This is broadcast and picked up by the receiver, which is designed to convert the current back into the image again. Right?"

"Yes," Irwin answered.

"Suppose that instead of going into a television receiver it were to go into an amplifier and come out as sound. Could your ears pick up the sound and convert it into a visual image in your mind?"

"Hardly," Irwin said.

"It could with training," Jack corrected. "By seeing the image and hearing the sound equivalent to the image you could eventually build up the necessary associations to do it. The image of a man, for example, would produce a sound of a certain kind. Soon you would recognize that sound and associate it with the image.

"Perhaps a simpler illustration would be the sound track on a film. There—"

"I get what you mean now," Irwin said. "We have an instrument for the totally deaf. It's quite common.

It converts the sound into a complex sine wave image. The person goes to a school where he learns to read these sine wave images. It's really remarkable. Would you believe it? They actually learn to enjoy music and tonal quality, and those that did have hearing at one time say that after a few years the images of the sounds are converted by the mind into sound again so that they hear with their eyes via the oscillograph!"

"There you have it," Jack said, laughing. "We have instruments that pick up the ether waves set up by these ancestors of ours and amplify them millions of times. They are incredibly delicate. We learn to understand them and recognize them so that eventually most of us don't need the instruments to talk with our ancestors."

"After quarantine is over you'll get a chance to try one of those instruments and see what you get. Some people are natural telepaths without knowing it, and already have learned to interpret these ether waves correctly. If you're one of those you should be able to make sense out of what you get through the instrument."

"You talk of ether waves," Irwin said. "In the account of the building of this ship published in a newspaper at the time there was mention of new basics in science. Yet the nature of those basics was given rather obscurely and certainly aren't known to us. This ether, for example. We have proven there is no ether."

"You mean," Jack said slowly, "that you have built up a theoretical picture of what you conceive the ether to be if it exists, and then derived properties from this theory and

found out those properties don't exist."

"It amounts to the same thing, doesn't it?" Irwin asked. "The ether must have certain properties if it exists. Those properties will give rise to certain things in nature. If those things don't exist in nature the thing that must necessarily have those properties if it exists does not exist!"

"Quite logical," Jack said. "But full of holes. It all hinges on the phrase 'must necessarily have.' Let's call this ether your scientists proved did not exist a 'theoretical ether'. Actually there are an infinity of theoretical ethers—each with its own set of properties. Your scientists picked the first one they conceived and excluded the rest. They proved that one out of an infinite number of theoretical ethers does not exist. They immediately excluded the others from consideration."

"Perhaps," Irwin admitted. "I must concede that the science that built this ship works, and is far in advance of our own science. Undoubtedly you are right."

"Well, you may rest assured it will all be given to you," Jack said softly. "That's the reason for our coming home."

"You mean that Mars is to be given the secret of building space ships?" Irwin asked eagerly.

"NOT only space ships," Jack answered. "A million other things. You're going to get the basics of science. When you have them you'll wonder how you ever learned anything. You'll find that the velocity of light is greater in space than you think, the sun is over a million miles closer than you have measured it, that everything you still puzzle over in your science will be made known

to you in ways that can be proven beyond any doubt. I don't know the state of your industry and science. Since you say that it is believed the ether doesn't exist, I can just about guess, though.

"Shortly I would like you to write a note to your people outside. You three must stay here during the quarantine period in case we have given you some disease that might cause an epidemic. In that note I want you to explain the reasons for your having to remain on board. Also I want you to tell them to bring history books and science books of all kinds so that we can form a comprehensive picture of the state of your civilization. Will you do that, Dr. Crabtree?

"Certainly," Dr. Crabtree said. "A startled look appeared on his face. He glanced at his wristwatch.

"Oh," he groaned. "I had no idea that so much time had passed. Do you know that it has been five hours since we entered the ship? I wouldn't be surprised but what both planets are very much worried. It may even be that they have given up hope and believe we have been killed. They might attack the ship!"

As if in answer to Irwin's voiced fear an alarm gong sounded, and a sensation of quickly increasing weight made itself felt.

Immediately a loud speaker came "They attacked us!" the loudspeaker said. "We're going up until this can be straightened out. Otherwise they might penetrate our shell."

"Let me at a radio," Irwin said. "I'll tell them we're all right."

Jack and the other eleven space men looked at one another guiltily.

"Sorry," Jack said. "You see, long ago our shell antenna was hit by an asteroid and sheered off. It would

have cost at least one life to repair it in space so we decided not to until we reached a planet. There it would be simple to do it. So we don't have any radio."

"Oh," Irwin said dully. "Then what will we do? We thought the reason you didn't answer was because you were being secretive. It didn't occur to anyone that anyone with a space ship might not have their radio working."

"There's only one thing to do," Jack said. "By now Mars and Venus are convinced we are hostile, and that we have probably killed you if we aren't holding you prisoner. We'll have to go to the Earth. There we can repair our radio antenna and contact Mars or Venus and straighten things out. Also in that time we should know about diseases. Our original intention was to go to the Earth first anyway. We circled Mars because it wasn't out of the way. When we saw it was inhabited we decided to land. Now we'll just go on with our original plan."

YOU see," one of the other spacemen added, "We want to find out if the attempt to build underground cities was successful, and whether there are still people living there. There will be plenty of time to straighten out this misunderstanding while we are doing that."

"I doubt if it was successful," Irwin said. He told them of the flight to the Earth in a rocket ship, and of the printed material televised to Venus by the explorers before they died. He concluded with, "It is possible, of course, that in the stuff they didn't have time to send there is printing of later dates. However the material was not sorted chronologically, so the odds are against it. An-

other possibility is that the task of carving out underground cities went on even after the death of printing. If a substantial colony with the necessary boring equipment became entrenched safely in the underground, they might have survived. But for half a century after we contacted Venus both planets continually bombarded Earth with radio broadcasts without receiving any response, so it seems to me quite certain there is no life on Earth."

"Nevertheless we must make sure," Jack answered. And that seemed to be the consensus of opinion of all the space traveling unit of humanity.

THE day came when it was finally certain no diseases were carried by either the three Martians or by the space travelers that would be dangerous to the other. It was a day of gala celebration throughout the ship.

Irwin got to see the many details described by the reporter, Les Turner, in that series of articles in a daily paper so long ago. He also got to see the many achievements of the spacemen in their centuries of star traveling.

He saw a hydroponics section, a room fifty feet long, twenty feet wide, and twenty feet high, where more food was raised than a thousand acres of vegetable farms on Mars could produce.

He saw the smoothly functioning master controls of the ship in their ultimate perfection, and spent hours gazing through the ship telescopes at the stars, now so bright that the ten inch objective lenses set in the outer shell made possible magnification nearly equal to his own four hundred inch reflector.

He discovered that the people on the ship were all natural optimists, continually happy, and lived in complete harmony. He had difficulty telling them apart because they were all so nearly the same size at the same age, and were as alike in features as brothers and sisters.

In fact, he found that the space travelers told themselves apart more by peculiarities of facial expression than by shape of features. Of the several dozen men who looked exactly like Jack, only Jack had his particular way of smiling so that his eyes crinkled at the corners.

Jack seemed to have adopted the aged astronomer from Mars as his own protege. They were together most of their waking hours and found more and more to bind them closely together.

They often entered into long discussions from which Irwin emerged with greater and greater understanding, not only of these star traveling people, but also of the nature of things. For example, one day Jack and Irwin were relaxed in the main salon. It was a huge auditorium-like space. In the exact center was a large fountain spraying into a pool. Surrounding the pool were exquisitely carved statues of maidens, in a rose tinted, semi-translucent stone—a rare jade. Over the vast expanse of the floor were artistically arranged flower beds.

Artificially induced breezes carried subtle variations of the perfumes so that at one moment the fragrance of a thousand roses would delight the senses, to be replaced in the next moment by the tang of carnations, or the intoxication of a million violets.

In another hour a concert was to begin. At the hundreds of tables for four that were distributed among the beds of flowers,—all bolted strongly to the metal floor underneath the plastic surface, people were slowly gathering.

Jack and Irwin had come early, and were enjoying a cool drink with a strange, exhilarating flavor. There was a youthful light in Irwin's eyes that had been lost for a long time.

"I have a theory," Irwin said suddenly, "that I am dead and this is heaven. It hangs together, too. The mind tends to introduce understandable concepts in place of things coming to the senses of awareness that are beyond understanding. It is well known in psychology that a series of meaningless events are often retained by the memory as a series of ordinary incidents bearing little relation to the actuality. In life I was an astronomer. When I died and came here to heaven my mind immediately concocted a 'rational', though far fetched, sequence of incidents involving a space ship, stars, science, etc., to 'explain' and rationalize my being here. However, my mind cannot rationalize this garden of heaven. The obvious rationalization that it is the end product of thousands of years of devotion to beauty for all the senses of a fragment of the human race in its star travels is a little too steep. So my common sense dictates that I should find a more reasonable explanation for all this. The more reasonable one is that I am dead and this is heaven."

He glanced slyly at Jack and waited for the inevitable lengthy discussion of what he had said. He was not disappointed.

"Surprisingly enough," Jack said with perfect seriousness, "you are nearer the truth than you think. What IS reality? What our senses bring to our minds is a PART of reality, but never any essential or adequate part of it. Our minds build theories on this inadequate collection of data from the Universe around us. The theories become the reality to the mind, while the vague, inadequate incoming impressions merely serve to excite into conscious awareness these memory pictures in the mind created by the mind itself.

"The mind is a very poor instrument at best. It's like a loudspeaker with very positive vibrations of its own. A quiet melody imposed on the loudspeaker by the reality of an electric current becomes distorted and lost as the natural tones of the loudspeaker blare their cacophony over and over, as it is excited by the subtle harmony of the external stimuli. And that stimulus itself is at fault in the same way. Its overall effect is an illusion due to a defect in the receiving instrument, and only represents the thing that originated it in meager outline.

"Any 'reality' brought to the mind by the senses is a second hand, third hand, or even more remote representation of the reality which gave rise to it. In each of these translations of the 'message' originating in reality the same inadequacy and distortion takes place, so that what we see or hear is like an old wives' tale after it has made the rounds of the village a dozen times. All we can safely conclude from any sense impression is the stupid remark that where there's smoke there must be fire. In other words, we can safely conclude that there is reality. We cannot, however,

discover the true nature of reality from a study of reality itself. That is the reason experimental science inevitably leads a race along the path to eventual extinction. The final symptoms are always unmistakable — a highly developed technology based on an almost completely erroneous set of theoretical conclusions. The theories themselves are unimportant. It is the fact that they are inadequate and incomplete and for the most part completely erroneous that makes possible the developments that bring disaster.

"A bacteriologist will confine a dangerous plague virus to a carefully guarded test tube and study it in an attempt to find an antitoxin for it. Later, if his civilization lasts that long, he will confine a synthetic virus just as carefully until he is sure it is harmless.

"A physicist, with his ignorance of the principle of life, with a vague understanding that vast power can be gleaned from a new source, and with the grandiose theories his mind has concocted from the meager facts of the event, will let loose atomic disintegration on a planet without concerning himself about its ultimate consequences.

"His fundamental modus operandi is to learn from experience. From the very essence of his method he dooms himself and his race to extinction when he finally does something with disastrous but not immediately obvious consequences."

YOU may be right in that last," Irwin said. "But I disagree with you that the data science gathers is incomplete and trivial, and that the more important data is missed. True, the senses bring very little directly. The microscope proves that

about vision, as does the telescope. Instruments invented by the scientist replace the unreliable senses, registering data on paper as graphs, on photographic film, and in many other ways."

"Some," Jack interrupted. "I didn't attack the validity of experimental data. I merely questioned its adequacy. Let me put it this way, since you are an astronomer. Suppose you were to build an instrument that could measure exactly and give to you a completely true value for the magnitude of the force that drives Mars from its straight line path at every instant. From the data that instrument brings you continually could you find out the detailed structure of the solar system?"

"Of course not," Irwin replied. "It would be registering a resultant, not a series of details. Perhaps in time the existence of the sun and planets could be deduced from such data, but I doubt it."

"There you have it," Jack said, relaxing with a satisfied sigh. "Irresolvable resultants. I disagree with you that the structure of the solar system could not be built up from the data of the instrument we just invented. It could, provided that someone invented the theory that that data was a resultant, and the nature of the factors blended into that resultant. Then it could be proven by mathematics based on purely hypothetical basics that such and such a theoretical structure would give a resultant as a function of the time, and the calculated curve would coincide within one or two per cent of accuracy with the actual data. But the existence of comets and asteroids would still be unprovable and UNNECESSARY, because they would add nothing to

the accuracy of the theoretical conclusions. Only the details of theory necessary to the explaining of the resultant would be acceptable to science. The rest would be classed as fruitless theorizing.

"If two factors in a theory cancel exactly they are immediately excluded from the theory. That is a subconscious mechanism of the scientific mind. I know nothing yet of the state of theoretical science on Mars, Dr. Crabtree, but I assume it is much the same as that of the Earth back in the days before this space ship was built. Then it was believed and taught that when an electrostatic field was neutralized it ceased to exist. The OBVIOUS conclusion that a gravity field is a perfectly neutralized electrostatic field was not drawn. It was believed that electricity was positive and negative, or like and unlike. It was believed that all matter was built up from particles that seemed to be the nuclei of electric phenomena. Yet this duality of the basic particles of matter was not thought of in connection with gravitation and inertia, which were allied in the scientific mind. It was believed that inertial mass was of a single kind, and directly related to gravitation. It could not possibly have been inferred from the science of twentieth century Earth that the inertial mass of all the electrons in the sun was many times the total inertial mass of the sun; or that the gravitational field of the sun was an exactly neutralized duality of two electrostatic fields inconceivable greater than the residue effect called gravity."

JACK gave a cynical snort and then went on.

"In the experimental method," he said, "if you have in actuality one

force pushing an object in one direction with a billion tons pressure, and another force pulling at it with a billion tons and three ounces of pressure, you can concern yourself only with the three ounce resultant, and your theories to explain that three ounces must not introduce cancelable elements not immediately measurable and provable. So you prevent any adequate explanation of the phenomena you deal with."

"It's all very well for you to sneer at our science which has made possible my four hundred inch reflector telescope," Irwin said with some show of heat. "You were undoubtedly handed the true explanation of all the mysteries of the Universe complete in your elementary education. But you must admit that for any piece of data, granting that it is only a residue, and often a residue of things that are not in the least like the residue itself, doesn't that leave an infinity of cancelled opposites that could be introduced into any explanatory equation? If I were to say that one and one is two, you would immediately sneer at that and say that one and one is two million and two minus two million. I can't see that that would prove any more adequate than the simpler statement."

"Only if you were to insist that the second statement does not exist," Jack said. "There is a subterfuge in mathematics that I am sure you are familiar with, Dr. Crabtree. In a complex equation it is often possible to add and subtract some element not in the equation, and arrive at a very simple expression. The entire family of mathematical expressions equal to zero are contained implicitly in the unwritten zero added to every equation. They are there, and they may

be written when it is necessary in some stage of manipulation of the equation."

"Well, what are you driving at?" Irwin said. "Are you trying to tell me that the experimental method will never uncover the nature of the reality of the Universe?"

"Exactly," Jack said. "Not only will it never arrive at the nature of reality, but inevitably in the natural development of experimental science, the theoretical science that grows out of it will automatically stalemate itself."

"Then tell me," Irwin asked. "How in tarnation did those ancestors of yours that discovered the true basics and built this ship arrive at them? If they didn't get them from the experimental method what did they do?"

"They invented a game called Theoretical Universes," Jack said. "You see, always before that men had made serious attempts to solve the nature of the universe. They made their attempt seriously, committed it to paper, and then died, and the inevitable end of their attempt was failure."

"It was like it might be if you were only allowed time to play one game of chess during your life, and you had to assert that your game was the true chess game. Or, more accurately, it was like it would be if you were allowed to play any game you wished, but had to finally settle on one game such as chess and assert that chess is the only true game, and the rules in chess are the basic, perfect rules that account for all games, and that all other games are really chess or they don't exist."

"Then these ancestors came along and decided that there must be an

infinite number of games called theoretical universes, and the one played by experimental science was not the real one or the only one. They generalized rules to play the game. They said, 'A game must have pieces, whether they are chess men, cards, or concepts. A game must have a set of rules. If you alter one rule or one piece you have a new game.'

THEN they decided the Universe was a game. After that it was easy. They simply invented the science or art of inventing new games. After that they did nothing but invent games until they found one that did the same things on paper that Reality does to the phenomena that excite our senses and the needs of scientific instruments.

"Of course there are shortcuts they employed. They took what they called CLUES from the field of reality to act as signposts. Then they ignored reality until they had their game figured out. Their theoretical universe. When they could bring the theoretical universe to bear on the field of observable phenomena they compared."

"Actually it was quite simple. All the 'cards' could be bought at the local store, figuratively speaking. The same with all the rules. All they had to do was pick and sort and build and check. In a surprisingly short time they had it solved. Then experiment took its true place—not as an instrument of discovery, but as a quick check on the correctness of conclusions arrived at on paper."

"This was before this ship was built?" Irwin asked.

"Yes," Jack answered. "After the basic concepts that were to the theory what primal substance is to re-

ality had been proven sufficiently so that it was certain they were not only correct, but also complete, their qualitative development went rapidly, with mathematical development following much slower. There was good reason for it to be much slower. Natural law as formulated by experimental science generally took simple form with the variables simply expressed. Constants covered a multitude of evils and all infinitesimals were dropped as not mattering very much.

"In the new work many of the equations expressing so called natural law, describing behavior in phenomena, were complex, with much of the hitherto neglected phases coming into the picture.

"Light, which had been strongly asserted by the old science to be a universal constant, was proven to be quite variable. Due to its curvature in a gravitational field, which had been neglected, it was soon found to travel over a hundred and eighty-seven thousand miles per second in interplanetary space. We have found since then that this increases to over a hundred and ninety-one thousand miles per second in interstellar space. By calculation we know that in the heart of the sun this speed drops to a low of less than thirty thousand miles a second.

"Mass, which had been considered equivalent to gravity strength was found to have only an incidental relation to it. A billion tons of matter had more than a billion times as strong a gravity field as one ton of matter. Also, a ton of matter contained roughly nine tons of negative substance and ten tons of positive substance. The inertial mass of matter is always a residue.

"In rockets only this residue is used to produce thrust, and that at low velocities of the ejected mass. In this ship there is a separation of the two kinds of inertial mass, so that we receive nearly a hundred per cent efficient utilization of inertial mass, and with ejection velocities that are many times that produced in rocket blasts. Not only that, we gather our rocket fuel as we go along in the form of electrons, protons, positrons, and negative protons, separating them in magnetic sorters and giving them tremendous speeds in our betatron drive setup."

AT that moment the music began. The discussion was ended, as Irwin had learned from experience. These star travelers gave their undivided attention to music when it was played. And indeed it deserved it. There were subtleties of rhythm and melody and a mastery of expression that made the best Martian composition sound like the fumbling attempts of beginners.

And thus the days passed. Irwin lived almost a dream life. Whatever he wished to learn about in the morning was explained before he retired to his room in the evening. One day he expressed curiosity about a strange creature on display in a cage.

For the next few hours he listened to an explanation on the interaction of a living cell and its environment. Jack concluded this lengthy discourse with the words, "So you see that fundamentally each cell in an organism takes its food from its immediate environment and substitutes in its place the waste products of its metabolism. The food it gets is either the waste products of other cells or else food the other cells did not have time to assimilate. The total effect of

the cell on environment is the diminution of certain substances and the increase of certain other substances.

"In the human body adrenalin is the waste product of certain cells and the food of certain other cells. The waste products of all the ductless glands in the body go into the environment, which is the blood stream, and then are distributed to the body where they form a very essential part of body and nerve cell environment. In turn, body and nerve cells give off waste products that are essential parts of the food of the ductless glands. They work together within certain limits."

Gradually Irwin's feeling toward these star traveling humans was changing. When he had first met them they seemed no different than ordinary Martians except in dress. Little by little the differences were appearing to his eyes. Their knowledge was based on permanently true basics rather than tentative theory. Their techniques were often too delicate and subtle for his comprehension. They dealt with things that scientists of Mars ignored as being irrelevant.

In one laboratory he saw technicians engaged in cell surgery, delicately cutting through the wall of a single cell and planting a foreign substance of almost molecular smallness, then closing up the wall again;—all with remote control instruments, directed through a micro-scanning device that projected the scene on a large screen in front of the technician.

In another section he saw machines making smaller machines, which in turn made micromachines that could be seen only under the microscope. He saw two way radios

that fit snugly into the ear, slipping out of sight next to the drum. He saw robot calculators capable of solving the most complex of mathematical equations, yet which would slip easily into a vest pocket. He saw dozens of different machines with thousands of parts in them, which weighed a small fraction of an ounce when assembled.

And all this—the creation of super science and supertechniques embodied in a fraction of an ounce of metal and plastics, the beings who did it walked quietly with unassuming friendliness; common men who might well have been walking along a sidewalk somewhere on Mars instead of living in a ship that had gone to the stars and returned.

THE Earth grew larger and larger as the days passed. It was their plan to go into the zero-gravity spot between the moon and the earth and make a survey before attempting to land. Already topographical features of the planet were visible in large areas, and these were being compared with maps on board to determine what changes had taken place and to acquaint the travelers with the locations of the ancient cities and countries.

The Martian space ship had landed near Oklahoma City on its ill-fated trip centuries ago. The star travelers planned to land at Chicago. There they would repair their shell antenna and establish contact with Mars and Venus and straighten out the misunderstanding. After that they planned to explore the whole globe and determine whether life could once again gain a foothold on the surface, and whether the ancients had succeeded in establishing themselves underground and still lived.

An air of excitement pervaded the ship as it began to decelerate to its resting point under the Moon. That huge orb swept majestically by as they used its attraction for a brake.

The shock recorder was registering an average of ten hits on the shell each minute from rocks ranging in mass from a fraction of a pound to nearly a ton. Yet so perfect was the shock mechanism that none of these hits could be felt in the central sphere, although most of them would have sunk a battleship in the days when the nations of Earth fought one another.

The television eye had been turned into the telescope, bringing the view of the Earth's surface to everyone on board. The telescope was directed by rotation of the ship itself, and in the routine piloting of the ship it was impossible to do more than get broad sweeps of the planet.

Each of the hundreds of view-screens throughout the ship had its half dozen or so watchers, and the constant maneuvering swept every section of the Earth into view every minute or two; so it was impossible for at least some of those aboard to have missed the silver streaks with tails of fire that rose from the section designated on the maps as New Mexico.

They could be nothing but rocket ships, and excitement over them mounted rapidly. The obvious conclusions were drawn. The atmospheric radioactivity begun by the atom bombs so long ago must have finally died down. Since it had undoubtedly destroyed all life on the surface these rocket ships must be manned by the descendants of that part of humanity which had gone underground. Since they had not

been in evidence when the ship from Mars had gone to Earth they must have returned to the surface only within the last century or two.

The question uppermost in the minds of all was, did those rocket ships contain **welcoming** or **attacking** details of men?

It would be twelve hours before the coming rocket ships would reach the ship. A general assembly was called to discuss the problem, and Dr. Crabtree was asked to give his ideas on the matter.

"I'm sure I would not dare to presume to more wisdom in the matter than you are capable of yourselves," he began modestly. "Yet from my point of view it seems that you must repair your radio at all costs. You are condemned without a hearing by Mars and Venus because of your silence. It seems you will meet the same problem on Earth. When those rocket vessels arrive they will probably signal you. Not receiving any reply they will assume it is because you are hostile and refuse to reply, just as Mars did."

WHEN Irwin sat down there was a deep silence in the assembly. Finally Jack stood up beside Irwin.

"Dr. Crabtree is right," he said seriously. "We all realize what that means; death to at least one of us by the most horrible method conceivable. We have outlived the ancient doctrine of heroics. Nevertheless such a course must require a volunteer. I submit myself to the job. I not only have the qualifications necessary to repair the antenna, but also I have reached my full development and will lose little by death."

He stopped talking and stood silently, waiting the reaction to his words. Instantly a dozen others

stood up. They shouted to drown out one another in their attempts to be heard.

Angrily Jack strode to the front of the auditorium and faced the gathering. He held up his hands for silence.

"You are a bunch of conceited fools," he said disgustedly. "You, Arturo, do you have the training to even recognize an antenna when you see it. Any of you, going out there and dying before your time, would be more trouble than the good you would do. Dead you would be a nuisance. Alive you would suffer."

"And aren't you being conceited in thinking that you alone possess the qualifications necessary for the job?" Arturo asked, his face red with anger. "Are you sure you could repair it alone and unaided? It seems to me you are a more conceited fool than I! Is it the service or the exalted position you would gain that attracts you?"

"Then you would join me and make the sacrifice on the possibility that I might need someone to hold a flashlight for me while I work?" Jack asked softly.

"Yes!" Arturo said after a moment's hesitation.

"Good," Jack said. "Then let's get started. There's not a moment to waste, because we don't know how long it will take us."

Jack caught Irwin's eye and smiled.

Two hours later Jack and Arturo were ready. Irwin had gone over the blueprints of the ship with them and the others who helped in the preparations. Equipment was loaded in the elevator sufficient to take care of whatever repairs were necessary, even to completely replacing the entire antenna equipment.

The two men were encased in space suits except for the helmets which were to be put on when they made their farewells.

Jack held out his hand to Irwin who took it, a tear in his eyes.

"Are you sure there isn't another way?" Irwin asked, his voice trembling. "Couldn't you build some kind of remote control robot to do the work while you stay inside?"

Jack shook his head.

"After the antenna is functioning again we could use a robot," he said. "But the outer shell is opaque to radio. There's no other way."

"But if you find the trouble and fix it in a hurry?" Irwin suggested.

"You saw the blueprints, Jack shrugged. "They showed you the details. It's one and eight tenths miles around the circumference of the shell. It'll take us hours to survey the job and determine what to do. So before we actually start repairs it will be too late to turn back."

Irwin gripped Jack's hand warmly. It was goodbye. Both knew that.

There was a final test of the radio equipment the two men carried so they could communicate with the interior of the ship after the antenna was repaired. Then the elevator door closed and Jack and Arturo began their slow journey to the opening in the outer shell.

As the door closed, blocking off their last view of the world they had known all their lives, Arturo turned to Jack and grinned.

"It looks like we talked ourselves into something," he said ruefully. "Think how nice it would have been to let somebody else be the hero."

JACK didn't answer, but bent over the packs of equipment and searched rapidly. He uncovered two

boxes and ripped off the covers. Inside were two packs with straps dangling from them.

"Put one of these on," he said.

"What are they?" Arturo asked. Then his eyes widened in pleased surprise. "Parachutes!"

"That's right," Jack said with a crooked smile. "After we get the antenna in shape there's no reason we can't cut loose and drop to the Earth and spend our last days in further adventures. We can consider it our reward for our work."

"Hmm," Arturo said appreciatively, strapping on the chute.

Now both men put on their helmets. The elevator had left the shaft and was dropping slowly on the thin strand of cable. Already the air was growing thinner as the pumps sucked it into huge storage tanks in preparation to the opening of the outer hatch. After the two had passed out and closed and sealed the hatch one more the air would be returned to the space inside the outer shell where it was needed to reinforce the cushioning effect of the shell, and absorb its share of cosmic rays that got past the shell shields.

When they stepped out of the elevator they made their last radio contact with the core and learned that the ship was now settled in the gravityless spot between the Earth and the Moon, and the telescope was following the progress of the fleet of rocket ships rising to meet them.

The hatch cover lifted soundlessly, revealing the intense brilliance of outer space. They hastily dropped filters over their eyes until vision was normal.

Already they could feel the tingle of the searing cosmic rays in their bodies. Each second hundreds of

cells in their bodies were being killed and dozens of atoms were being blasted, to become radioactive centers of poison contaminating their bodies.

"We can't waste any time," Jack said into his head phone. "The less time we spend in space the longer we will live after we get away from the rays."

The two men separated and began a survey following their plans as they had been decided on beforehand. Each carried a pack of materials for repairing breaks. The rest of the equipment was anchored near the hatch, contact with the smooth metal of the shell being kept by board pads of sponge-like material impregnated with a tenacious, sticky material that resembled a non-drying glue in its action.

The same fluid enabled them to walk along the shell, being fed to the soles of their shoes through small tubes so that the normal exertion of walking broke the contact, but only a violent effort would break the contact of both feet and send them off into space.

Hour after hour they worked, pausing when they found a break in the antenna or a place where it touched the shell, then moving on slowly so as not to overlook any part that needed repairs.

At last they were done. They knew that capacity meters in the control room of the ship would notify those inside when the antenna was in working order. Then the powerful radio equipment would be connected and tried out. They stood well back from the repaired antenna and waited for that to happen.

A voice sounded in their ears.

"Can you hear us?" it said.

"Yes!" both Jack and Arturo shouted, their relief and gladness at having succeeded without calling for more help manifest in their voices.

"The rocket ship fleet is getting closer now," the voice said. "You'd better return to the hatch and get inside where we can take care of you."

"Nothing doing," Jack said, grinning at Arturo through his helmet. "We're breaking loose now and dropping to the Earth. We brought chutes with us."

There was a long silence. Finally the voice said, "O.K. If you make it we will see you on the Earth. Try to contact us by radio when you get down, will you?"

"We'll do that," Jack said. "Good-bye."

THEY joined themselves together with a hundred foot length of small but incredibly strong plastic cord and with a rapid jumping motion broke loose from the shell. Using what gas was left in their oxy-hydrogen torch assembly for propulsion they started their journey earthward.

Then, by common consent, they fell asleep. It would be many hours before they reached the upper atmosphere. If they were struck by space debris they had no defense, nor had they had such protection since they left the interior of the ship. For interminable hours they had been working at top speed and their bodies had been receiving wound after wound from cosmic rays, which, though very small, set loose waste poisons that drugged their bodies and minds.

Their pilot chutes would open at the first indication of atmospheric resistance, pulling out the huge main

parachute which, in the uppermost atmosphere, would slow their speed down to a few hundred miles per hour, and slow it more and more as the density of the atmosphere increased, so that when they reached the Earth's surface they would be falling only a few feet a second and land without harm.

Those in the ship picked up their receding bodies and followed them for several miles until they dwindled to mere points and were lost to view. Then they shifted the ship so that the telescope again dwelt on the approaching rocket ships.

A message was sent out over the radio. Then the set was switched to receiving and they awaited a reply. Finally it came.

"Who are you?" a curiously metallic voice asked haltingly.

"We are descendants of the people that left the Earth in this ship long ago," the radio operator said slowly and clearly. "Do you have any records of us so that you know of this ship?"

Twenty minutes went by before there was an answer.

"You are humans?" the metallic voice asked expressionlessly.

"Yes," was the answer.

"What a strange voice!" Dr. Crabtree said.

"Isn't it!" someone standing near him replied. "Doesn't sound a bit human."

The minutes passed and the rocket fleet drew ever closer, but no further communication came from the approaching ships.

When they were less than five hundred miles away a final message was sent by the star people.

"If you are receiving us peacefully please say so," the radio operator

said. "Otherwise we will have to defend ourselves."

"How can you do that?" Dr. Crabtree asked his neighbor. "You don't have any kind of weapon."

The man smiled grimly.

"You'll see," he said.

The foremost of the rocket ships dived toward the star ship as he spoke. The viewscreen that brought the image from the telescope to all parts of the ship centered on this ship and enlarged it until it filled the screen.

A gasp of horror rose from every throat. The nose of the approaching ship seemed a mathematical point about which the front view of the projectile centered. Slightly off this center a transparent bulge could be seen, and inside this bulge crouched a figure.

THE figure was far from human. A bulging cranium topped two large, saucer-like groups of faceted eyes. Insect-like features completed the horror. Two thin arms could be seen manipulating the controls that guided the rocket ship in what now was known beyond doubt to be a hostile attack.

The ship and the face appeared nightmarishly for a second, then the rocket swung broadside. A pale glow spread over it.

The scene expanded to take in the other ships. The glow was spreading rapidly, and several of the ships collided with blinding flashes. The rest slowed, and then retreated in the screen.

"What happened?" Dr. Crabtree asked in amazement.

"We turned our electron stream on them," the man beside him explained. "It charged their ships so that they were repelled away from us. You

know—like repels like. The surface of the ship throwing out electrons is charged with them. When the electrons reached the rockets they became charged too, and a tremendous repelling force was set up between them and us."

"Poor Jack," Irwin said sadly. "He will think Earth's inhabitants are human, and they aren't. How could such a race of insects be on the Earth? Where could they have come from without our knowing about it on Mars?"

PART III

Jack awoke with the feeling that his neck had just been broken. Next came awareness of a soul-shattering steady shrieking accompanied by a slowly fluctuating, throbbing wail, as of lost souls in the deepest of hells. Then awareness encompassed a feeling of intolerable heat and crushing pressure.

He suffered these feelings without trying to solve their cause while his mind struggled into full wakefulness.

Then he opened his eyes.

At once a flood of memory returned. His first reaction was one of intense loneliness, kindled by the memory that there could be no returning to his home, the star ship, and fed by the bleakness of his surroundings in the upper stratosphere of the Earth through which he was now hurtling.

The jerk that had awakened him had been caused by the opening of his large parachute as the first thin traces of atmosphere caught at the pilot chute and dragged the large one from its pack.

The heat and tremendous pressure were due to his enormous speed through the thinnest of gasses—over eight hundred miles an hour,

but rapidly lessening as the parachute acted as a brake, and the gas became increasingly more dense.

His body swung around so that the space-suited figure of his companion, Arturo, came into view. Relief bathed him like a cool spray. He was not alone in his misery, and come what might, he would have a life long friend at his side.

Arturo grinned through his transparent helmet and waved clumsily. Jack answered him. They looked downward toward the Earth. It spread over all the space below them, curving off at the edges. For the most part it seemed to be nothing more than a sea of whiteness mixed with dirty grey, but here and there the dark colors of land showed through, islandlike.

The shrilling noise was growing lower and softer. Finally it died down altogether. A few minutes later all external sights were blotted out by a light frost that congealed on the outer surface of Jack's helmet.

"Hey, I'm blind," he heard Arturo shout good-naturedly.

He reached up with his hand and wiped off the frost to discover that it accumulated as fast as he could clear it away. After that he contented himself with a single swipe and a hurried glance at the enlarging landscape below until the warm lower atmosphere melted the frost away entirely.

There was no way of telling what part of the world they were going to land on until they actually landed. That time grew minutes away, then seconds away.

Below was a dense carpet of lush vegetation that seemed to spread uniformly to the horizon in all directions. Jack lifted his eyebrows when

he saw this, for it was evidence of the end of the age of atmospheric radioactivity and the return of conditions that made life possible.

Absently he pulled on the thin cord that held him and Arturo together, drawing it toward him so that at the last moment he could release it and have plenty of slack.

Then a giant leaf twice as big across as his body rushed up to meet him. He felt the mild shock of its slap and plunged below it, to sprawl full length on a soft carpet of smaller plants and dirt.

He climbed to his feet and turned to see how Arturo had fared, and grinned mischievously when he saw the space-suited figure of his companion swinging helplessly two feet off the ground, hung up by its parachute which had caught on the overhead foliage.

HE went over and gave Arturo a shove that made him swing in a long arc. The next time he tried it, Arturo managed to hang on to him. They fell together, laughing exultantly. They were safe!

"Should we test the atmosphere for dangerous germs?" Arturo asked.

"Whats the difference, Jack said. "We don't have too long to live anyway. A few years at the most now, with our bodies burned by cosmic rays.

Arturo nodded. In a moment they had their helmets off, breathing in the strangely exhilarating atmosphere with its foreign odors of damp earth, rotting vegetation, and a thousand unidentifiable smells.

They gazed in awe at the giant plants and kicked at the sandy loam under their feet in puzzled wonder. The blueness of the sky and the

whiteness of the billowy clouds were a fantasia of beauty that struck deep chords in their racial memory. Instinct told them they were Home!

Almost humbly they rescued their parachutes and returned them to their cases. Then they began walking. They had no way of telling direction, but with the aid of the sun they were able to keep going in a straight line.

They went a half a mile before they saw their first sign of moving life. It was a beetle as large as a dog—clumsy and frightened. It ambled away with its mandibles clicking in fright.

After awhile the ground began to rise to a gentle slope. Faintly a murmuring sound came to them. They followed the direction of the new sound and came to a river. It was about fifty feet across, its waters flowing swiftly and bouncing from huge boulders in a white froth.

After some hesitation they tasted it. In it was the smell of damp decay and the faint odors of fish and plant life that could be detected only because they were new and strange; but to the taste the water was sweet and satisfying.

They drank as if it were some new and delightful concoction from the culinary department of their star ship. They had not realized it before, but they were parched. Not a drop of water had passed their lips since they left their home in the central sphere of the ship to repair the antenna.

After drinking they laid down on the bank of the river to rest and enjoy the strange wonders about them. They were beginning to realize the lavishness of nature. Thousands of tons of water flowed past them every

minute. Around them giant plants rose from the thick, rich loam. And now a strong breeze fanned at their faces and swayed the giant leaves of the plants. A rustling sound arose from the forest of vegetation they had passed through to reach the river.

Arturo fell asleep. Jack's mind was too full of speculation for sleep. They must keep on until they had found human habitation. They must try to contact the ship as soon as the Moon was visible.

The sun sank lower and lower toward the west. Another beetle stuck its head out of the forest and surveyed the two men silently for a time, then disappeared when Jack threw a pebble at it.

Jack fell asleep without realizing it. He awoke with the feeling that some loud sound had startled him. The sun was gone, but it was not yet dark.

He listened. Suddenly the sound of a feminine voice screaming came to his ears. He roused Arturo and told him to follow. Then he dashed off down stream in the direction from which the scream had come.

The river turned to the left. As Jack reached this turning the river bank for a half a mile came into view.

A hundred yards away was a girl surrounded by half a dozen nightmarish creatures. As Jack looked one of these creatures made a rush at the girl. She drove it back with a blow from a stick held in her hand.

It was obvious that eventually the creatures would wear down her resistance. Jack hesitated and looked around for some kind of weapon. Arturo pulled up beside him.

Along the bank of the river were scattered rocks. Hastily Jack and Arturo picked up some about the size of a billiard ball and ran toward the girl.

She saw them and gave a glad cry. The creatures attacking her turned to meet this new threat.

Jack stopped ten feet from the nearest and threw a rock at it with all his strength. The rock met its large, bulging cranium-like head and there was a sickening sound. Then the creature toppled over, motionless.

The others turned and ran, their eight legs working with clocklike precision.

The girl pulled a short handled ax from its case attached to a belt around her waist and frantically hacked at the slim neck of the downed creature. The third frenzied blow severed the head, which rolled toward the river.

Jack suddenly decided he wanted a better look at these strange creatures and rescued the head at the water's edge.

The girl was looking from him to Arturo with saucerlike eyes. Their blue depths held an awe and wondering speculation.

Jack gazed at her in unconcealed admiration. Beautiful as were the girls on the star ship, they were colorless compared to this Earth girl.

Her golden hair hung over her shoulders and glistened with a life of its own. Her face and figure had the qualities which make the difference between technical perfection and genius. Her nostrils still quivered from the ordeal she had been through.

"You are strangers!" she suddenly exclaimed. "What kind of clothes

are those you are wearing. They look like they might be space suits!"

"They are," Jack said, smiling. Then he frowned. "What kind of creature is that?" He nodded toward the decapitated head of the thing lying at his feet.

"They're the insect people," the girl said, shuddering. "There's so many of them that we humans are barely able to survive now. It won't be long until they figure out some way to exterminate us, and there is nothing we can do to prevent it."

"You mean they're intelligent?" Arturo asked incredulously. "That can't be. I've studied about insects. Their throat passes through their brain. When their brain mutates toward enlargement to the point where intelligence might be possible, it constricts their throat so that they are forced to become leeches. Then they live by not moving, and their potential intelligence never develops."

"Not any more," the girl said, shaking her head violently in emphasis. "About eight hundred years ago a new mutation took place that put their throats outside their brains."

SHE stepped to the head of the creature and with one expert blow, split it open. What she had just said became obvious. The bulbous cranium indeed housed a full sized brain with all its convolutions, and the throat passed under it unrestricted.

Jack and Arturo stared at the thing, beginning to realize the full implications of what they had learned.

"What kind of insect did this thing develop from?" Arturo asked.

"We kon't know," the girl said simply. "The books say that insects were

very adaptable, being able to change their body form and adapt it to many purposes. It may have sprung from the ant or the termite. It bears some resemblance to both and lives a communal existence as they did. But come. We had better get back to the cave before it gets dark."

She led the way downstream for another half mile, then turned inland. As they walked they got acquainted. The two men learned her name was Della, and that she and perhaps two hundred fellow tribespeople lived in a series of caves which opened not far away.

"I'm very much afraid of what will happen now," Della said, her lip trembling. "Those insect people that ran away will tell the others, and they will hunt us out as they have done to so many other tribes."

She walked faster and faster, and Jack and Arturo had difficulty in keeping up with her in their somewhat cumbersome space suits.

They came once more to the river which had circled around. Della led the way into the shallow water and went toward a place where the bank formed an overhang. Here close to the water level was a small opening. Della stooped and crept in this opening. Jack and Arturo followed.

After a few feet the tunnel heightened so that upright walking was possible. It was too dark to see.

Della took Jack's hand and led him. He found himself wishing he had taken off his space suit so that he could feel the touch of her hand on his, and decided that at the first opportunity he would remedy that error.

On impulse he lifted her hand and placed it against his cheek. Her soft

laugh came out of the darkness ahead.

After several hundred feet she stopped. A moment later a section of the tunnel wall sunk back revealing a large opening through which light streamed. The tunnel itself went on ahead, so that unless one knew just where to look the secret opening would be missed.

On the other side of the opening was a large cavern. Perhaps two dozen people were there. When they saw Jack and Arturo they exclaimed in alarm and several men sprang forward. Della ordered them back and explained what had happened.

At once Jack and Arturo were dual centers of excited, growing crowds, demanding to learn more of the star ship and of the people who lived on Mars and Venus.

Della stood beside Jack protectively and finally insisted that an end be put to the questioning for the present.

"Here comes Gregor! someone shouted.

The crowd parted. An incredibly old man was advancing, his white hair and flowing beard, together with his piercing blue eyes, marking him as a leader.

IN spite of his obvious age he walked with a firm stride and squared shoulders. His clothes were of the same dirty gray canvas cloth as were those of everyone else, yet on him they seemed different.

He stopped a few feet away.

"They tell me you two men are from a space ship," he said. "Where is it?"

"Out toward the Moon," Jack answered. "We parachuted down."

In a few brief words Jack told about the space ship. Then he asked a question that had been uppermost

in his mind since he had first entered the cavern and seen the gathered people.

"Are you descendants of the people who went underground when the atmosphere went radioactive?"

"Yes, the old man said sadly. "There aren't many of us left now. We've been fighting a losing battle with the insects."

"How did it happen?" Jack asked wonderingly.

"That we don't know," Gregor replied. "A few things are obvious. The insect people speak our language exclusively. They write our script as it has always been. They have rebuilt many of the surface cities and much of the industrial areas. So it is obvious that they did not go through a period of discovery, but merely adopted our civilization as it was abandoned by the surface people when they died out from the increasing radioactivity.

"We know that many kinds of insects went underground, living in sewers in the cities, in natural caverns, and in some cases in underground warrens they built themselves. We know from written history that the general trend of insect mutation was toward size rather than change of structure.

"When the mutation came that gave this species intelligence it also changed its bodily structure so much that it was never determined just what variety they did spring from. They had developed an enormous resistance to gamma radiation and long before we could safely return to surface life they had begun their struggle upward, mastering all that had been known at the End. When they discovered the underground cities and realized that the race that had

created the civilization they had acquired still lived they began to systematically uncover these underground cities, and exterminate us."

"But why couldn't you fight back?" Arturo asked impatiently.

Gregor shrugged hopelessly.

"In all the centuries of underground living we had forgotten how to fight," he said sadly. "I don't mean the technique of fighting. I mean we had forgotten the fighting spirit—the WILL to struggle. For so long each generation had been born into a perfect world where change was unheard of. Even now, dozens of generations after that paradise was taken from us, there are very few of us with the will to fight. We hide in holes, waiting for the final end. What is there to fight FOR? We number a few thousands at most in the world. The insect people number billions. Until you came we thought there were no more people any place in the universe than we few left on Earth."

"And now," someone wailed, "They know we are here because of Della's foolishness in going out, and they will find us and kill us all."

Jack turned to the man who said this. He was a big man, strong of build, with a godlike face and brow. In his arms was strength. Yet in his face was weakness and defeat—a weakness that had become the heritage of these people. The race of Man was not designed for a static life, and it had broken—grown morally soft.

Yet had it? The picture of Della facing the insect men and fighting them came before him. With eyes that were preternaturally aware Jack surveyed the faces around him. Suddenly he knew the answer. The women were not weak. Not all of them.

It was the men. And it wasn't the men either. It was their tribe philosophy.

HE remembered incidents in his own childhood when he and his fellows had exhibited weaknesses. The weaknesses had been ridiculed out of them as fast as they manifested themselves.

That hadn't been done here. Here it was the weaknesses that had been nurtured by the attitude of the grown-ups. The philosophy of extinction rather than struggle, of hiding rather than giving battle. However justified the tactics of retreat may have been originally when the menace came, they were no longer a temporary expedient, but the living philosophy of these people.

Suddenly the full implications of this state of affairs hit him. He realized it could not have been humans that came up to meet the star ship in those rockets!

"Arturo!" Jack exclaimed. "We have to go outside and contact the ship and tell them the state of affairs on Earth."

"You can't do that," Gregor said quickly. "There is no place for us to retreat, and the insect people will be looking for this place now. If you go out you will further endanger the whole tribe."

"Do you think the insect people can't find you anyway?" Jack asked pityingly. "All they have to do is follow the scent of Della and the footprints of the three of us, and I don't doubt but what they have a keen sense of smell."

"You're wrong about that," Della spoke up. "After we came in, water from the river flowed down the tunnel and wiped out the last traces of scent. If they do anything they'll follow the

tunnel all the way down and find nothing."

"And if you try to contact the ship by radio they'll find you," Gregor said.

"They already know where we are," Arturo said. "Those insects that got away are probably leading a party of them back here right now, and simple logic will tell them we can't have left this general area. They'll search until they find us. Maybe right this minute they have found the entrance to the tunnel, and they will KNOW we went in it, even though the river did wash away all traces of it."

"We've got to be ready for them," Jack said. "Quick! What do you have here in the way of weapons?"

"Nothing," Gregor said. "This was originally a storage section. No machines or source of power. It's lit by the cold light tubes built by our ancestors. We grow our food in hydroponic vats as we always have. Other than that we have nothing."

"A storage section?" Jack echoed. "What became of the stores?"

"They were cleaned out by the insect people long before we came here," Gregor answered.

"How did you come here?" Jack kept on.

"From the arterial channel," Gregor said. "But that is used by the insect people now. It would be suicide to open the place we came in at, because there are always insect people going along the arterial and they would see us."

A feeling of weariness overcame Jack. He had not realized what energy it took to walk through the soft loam with the handicap of terrestrial weight. A glance at Arturo told him

that his companion was nearly out on his feet.

"Good old Arturo," he thought. "He would go through anything uncomplainingly. He would drop in his tracks still insisting he was as fresh as when he started."

HIS glance shifted to Della. How different she was than her fellow tribesmen. Her venturing forth onto the surface world for no other reason than adventure proved this difference.

Wordlessly he began taking off his space suit. Arturo followed suit, and soon they stood up, free of the cumbersome garments, dressed in their lightweight, colored shorts and jackets.

"You're tired," Della said. "I'll bet you're hungry, too."

Jack nodded.

He found that cooking was only something existing in ancient legend here. There were fruits and vegetables which outdid even those of the star ship in flavor—the heritage from the peak of the underground civilization, then peaceful though uncomfortable unconsciousness on the hard tile surface of the floor.

Although it was several hours later it seemed the next instant when Jack awakened to the gentle shaking of his shoulder. He opened his eyes without moving. Della was bending over him, a look of fear and alarm in her expression.

"Jack!" she was whispering.

When she saw him open his eyes she put a finger to her lips to signal silence. Then she bent forward and whispered in his ear.

"The insect people are in the tunnel. Any minute they may discover our hiding place."

Her frightened eyes looked into his questioningly. He could read there the faith that if anything could be done to forestall extinction he would do it—and something else that had nothing to do with danger and death.

He sat up and put his arms around her. For a second he hesitated, then their lips met.

"So this is what you do when I am asleep!" he heard Arturo exclaim delightedly. Della pulled away in confusion.

"Go get a girl for yourself," Jack laughed.

"Oh, I have my eyes on one already," Arturo said. Then his face became serious. "Did I hear you say that the insect men were in the tunnel, Della?" he asked.

She nodded mutely, her face still flushed in embarrassment.

"What have we got that we could use for a weapon?" Arturo asked Jack.

"Nothing," Jack said crisply. "I doubt that anything would do any good anyway. Are you sure, Della, that there is no other way out of here and no other place you could all go?"

"There's another way out," Della said, slowly, "But no other place to go that I know of."

"Where's this other exit?" Jack demanded. "What does it open onto?"

"It opens onto the other side of the hill," Della answered. "We never use it because if we did the insect people could find it from our spoor."

"Arturo and I will put on our space suits," Jack outlined hastily. "We'll go out that way and come around and plug up the entrance to the tunnel, trapping the insects inside. It's just a delaying action. Then we will radio the ship and see what can be done."

TWENTY minutes later Jack and Arturo peeked out from the concealment of the lush vegetation that grew almost to the bank of the river and looked carefully at the small opening to the tunnel they had entered before sundown. The first light of morning revealed the details of things with an unearthly clarity.

Almost overhead the moon looked down, its night brightness fading to a ghostly whiteness in the dawn light.

The tracks of many large creatures were in evidence in the soft earth proving they were in the tunnel, but none were in sight.

The two men wore their space suits once more, with helmets on. Incredibly tough, the suits would stop a rifle bullet and certainly would be impervious to the jaws of any insect.

In Jack's hand was a crude bomb made of chemicals from the hydroponics stores of nitrates in the cavern home of these Earth humans.

Jack and Arturo crept from their concealment and approached the bank of the river. They could see the dark entrance to the tunnel, and as they looked a faceted-eyed creature came rushing out.

It carried the struggling form of one of the cave men. Jack raised his arm to throw the bomb; then paused. Another, and then another insect creature followed the first, each carrying a human.

They ran in the opposite direction from Jack and Arturo and seemed not to have seen the two men.

"They've broken in!" Arturo gasped. "Throw the bomb! Stop them!"

"If I throw the bomb it will kill some of the people," Jack said desperately. He dropped the bomb unlighted and rushed forward.

He reached the mouth of the tunnel. An insect rushed out and met the full force of Jack's fist, backed by the weight of an armored glove. There was a sickening crunching sound as the insect's body case cracked under the blow. It dropped its human load and lurched blindly into the shallow waters of the river. Its antennae were vibrating rapidly as if calling out some warning of danger to its fellows.

As Arturo reached Jack to join him in the hand-to-hand fight, an avalanche of insects swarmed from the mouth of the tunnel.

The two men fought them off with pistonlike blows, each blow connecting with telling force. A pile of squirming, dying giant insects grew around them until the creatures were leaping at the men from the mountain of their dead companions.

The end was inevitable. A wave of dark, angrily clicking insects swept over them. They felt their arms pulled back and tied together. Their transparent helmets became smeared with the syrupy blood of the things so that they could no longer see.

Then they were lifted and carried rapidly, helpless to know even which way they were going.

Jack cursed his helplessness. Yet in the heat of his self-condemnation and frustration realization began to dawn on him that there had been no attempt to kill him. Not only that, the captives from the cavern people had appeared to be unharmed.

COULD it be that the insect people captured humans and used them as slaves? A faint surge of hope grew in his breast. If that were the case it might be that instead of a practically extinct human race on Earth there was a large population of hu-

mans used as slaves by the insects. If that were so the case wasn't so hopeless.

He chuckled humorlessly. A simple matter of killing a few billion bugs who were as smart as people and perhaps could double their population every year, and who, on top of that, were almost as big as humans.

He was beginning to understand the hopelessness in the philosophy of the cavern people. Outnumbered, **CONFRONTED WITH A CONSTANT REMINDER THAT THEIR RACE DID NOT HAVE A MONOPOLY ON BRAINS ANY MORE,** hunted from birth until death as their ancestors had hunted wild game, their mental makeup had taken its sad turn inevitably.

After almost an hour of travel at express train speed Jack felt his captors slow down and take several sharp turns. Then he was dropped unceremoniously to the ground.

The whitely translucent haze that covered his helmet was washed off. It was an eerie feeling to watch the face and forearms of a huge insect going through the intelligent actions of washing the helmet.

As his sight of the creature cleared he saw it in detail. Its eyes were a steel blue and gave the appearance of being a honeycomb. The hard face casing was a glistening brown, as of painted metal covered with a thin layer of oil.

Only inside the mouth was there a change from the robot-like appearance of the creature. There mobile flesh moved. A soft whitish throat could be seen when the creature opened its mouth. The tongue, brown with a bluish tinge to it, looked very much like a human tongue and moved in much the same manner.

After the insect had cleaned and wiped his helmet, it left. Jack looked around. He was lying on the ground in a large, fenced-in enclosure. Arturo was only a few feet away, and the bound figures of the cavern people were also lying near him.

He looked for Della with sinking heart. She was nowhere in sight. Had she been killed?

Gregor, the ancient chief of the humans, was lying not far away with his eyes closed and a look of utter resignation on his face. Anger stirred within Jack as his eyes settled on a small baby trussed like the grownups, its body contorted by its attempts to get free from its bonds, its face apoplectic from crying.

A gate to the inclosure opened and a procession of the insect people came in. One seemed to be some sort of a leader. His bulging cranium was nearly twice as large as that of the others, and his forearms were different, having dozens of fingerlike appendages.

He glided over to Jack on his eight legs and stopped, ordering another insect forward with a curt motion of his head.

The other expertly took off Jack's helmet, then stepped back.

Now for the first time Jack heard one of these creatures speak. His voice was loud and metallic—a deep base thrumming; yet it formed understandable words in English!

"You are from that ship out in space?" the creature asked.

"Yes," Jack said curtly.

THE insect studied him for several seconds silently. Then it spoke again.

"I am fully aware of your feeling of hostility toward us," it said. "In a way we share that feeling toward you."

As thinking creatures we both believe we are the superior creation, and you with perhaps more grounds than we, since we have existed for only a few brief centuries while you have a heritage of thousands of years of written history and an unknown history before that as old as the planet."

Jack looked at the creature stonily, and made no comment.

"Ordinarily," the insect continued, "we do not bother with humans, but exterminate them wherever they are uncovered.

"However, we are very desirous of knowing how to construct a space ship such as that you came in, and are therefore willing to bargain with you to get that secret. You must know, since you know the potentialities of that ship, that we have been unable to effect its capture or destruction. In some way it is able to manipulate the forces of attraction and repulsion so that we can do nothing.

"Our offer to you is simple. Agree to teach us how to build such a ship and we will agree to segregate all humans in colonies where they may live in safety. In that way the human race on Earth will not become extinct, and they will no longer have to live in hiding. They will be protected and allowed to flourish. In time, when we and they get used to each other, perhaps the two races will develop a bi-racial civilization that will be ideal for both."

"And if I refuse?" Jack asked, curious as to why such a generous offer was being made.

"We have the science from which the details of that ship were contrived," the creature went on expressionlessly. "In time, now that we know such a ship exists, we can duplicate it successfully. We are willing to take

a gamble and try what we believe to be truth serums on you in an attempt to learn the secret at once. Since your body chemistry is so different than ours that attempt will probably result in nothing but your death."

It was Jack's turn to be thoughtful. In his mind a plan was hastily forming. It might be possible to play on this hope of the insect people for the secret of the ship. He must learn more about them and report it to the ship. Then they could do what they wished with him. His life was forfeit anyway. He could guess why they wanted the ship. The Earth was too small for a race that could repopulate it twice over every year.

The insects had probably seen the signs of civilization on Mars and Venus—Venus which had once been covered with clouds, so the histories said, but which had cleared during the centuries just as the Earth was now clear of its radioactive atmospheric fires.

They wanted the secret of the ship so they could begin conquest of the solar system. In return for a possible amnesty on Earth they would exterminate the people on Mars and Venus! They would spread their empire to the stars!

THIS threat must be stopped, and it might very well be that if he and Arturo failed to do it or find a way to do it, it might succeed. The fate of the entire human race was more important than the fate of the race that remained on Earth.

Suddenly Jack smiled.

"I will have to think about this before I make my decision," he said disarmingly. "I can't think about it while I am lying here, bound hand and foot; nor can I think favorably about it while my companion is bound, and

all my fellow humans. Untie them and treat them decently. Allow me and my companion to be your guests, and show us a little of your civilization. As long as we know nothing about you we can't think favorably on your suggestion."

"Very well," the insect said. "I'll give you ten days to make up your mind. During that time none of you will be harmed, and you and your companion will be my guests while I show you everything you wish to see. Then you must decide. If your decision is unfavorable we will use these people to find a truth serum that doesn't kill you. Then we will get the secret without your consent."

The insects untied Jack and Arturo first, then went on to the cavern people. The two star travelers stood silently, looking at each other with grim smiles on their faces. They each knew something which had not occurred to the insect man; something that was not known to anyone who did not belong to that small section of humanity which had lived generation after generation on the star ship as it traveled through the void: **THEY COULD DIE BY THE SIMPLE ACT OF WILLING TO DIE.**

They did not fear torture or truth serums. Nor did they fear poisons or any other thing. Body control, which became the proud accomplishment of a very few back in the days when the Earth was still untainted and covered by the races of man, was ingrained in these star travelers in their education.

Self-hypnosis was to them as ordinary as was swimming to the boy of the early twentieth century. Conscious control of the heart beat, even to the point of stopping the heart altogether, was part of their education.

As the cavern people rose to their feet after being untied, and chaffed their wrists to restore circulation, Jack looked around. Where could Della be? Had she eluded capture or had she been killed?

White haired Gregor approached Jack and said in a low voice, "I think she hid from them."

He had time for no more. The insect man, suspicious of their being together, moved closer.

"During this ten days," Jack said to the insect man, "I intend to return here every day to make sure you are living up to your word."

"I thought you would," the insect replied. "Shall we go now? I'm anxious to have you learn more about us. There is an old saying among your ancestors that in order to like a person you must know him. In spite of our utterly different body structure you will find that we are just as human as you are."

HE kept up a running string of chatter as he moved out of the enclosure with Jack and Arturo, surrounded by others of the insect race.

"As you know," he said, "when we evolved intelligence we found the remains of civilization already here. It took only a few generations to master the written language. We learned speech from the many prisoners we captured in the cavern cities we uncovered. We bred millions of special brains such as mine to unravel the secrets contained in the badly deteriorated books, and eventually learned how to restore them and reprint them.

"During all these years of mental emergence we have made startling discoveries which link us more closely to man than you would think. We find in the literature of the last days of mankind on the Earth that many

believed that a new race would evolve. They of course thought it would be a mutation of the human race into a superior mental level. They thought that because of their belief that only the human race could possess intelligence.

"Among their beliefs was one that the human soul was immortal, and reincarnated, living successive lives on Earth. We have more than good grounds to believe that this was so, and that we too have souls, and that our souls once lived in the men that were here on Earth. In other words, the souls that incarnated in Man now incarnate in us. We are the final Race!"

* * *

Della watched the space-suited figures of Arturo and Jack disappear through the door to the outside, and helped get the door shut once more. Her heart was pounding with a mixture of emotions. She fought the impulse to run after Jack and face what ever might come by his side. She fought the fear that whispered she would never see him again.

She had utter confidence that whatever might happen, Jack would live through it. This conviction gave her a superhuman will to survive. If the insect people broke in they would probably slaughter everyone they found. Where could she hide? The hydroponic tanks! But she did not want to be alone. She would die of fright if she were alone. Who could she take into her confidence?

Arturo had looked at Stella the same way that Jack had looked at her. He had said nothing to indicate his feelings like Jack had. Yet Della felt sure that Arturo would be very pleased if she took Stella under her protection.

Stella was the same size as she, but with a rich auburn hair instead of her own golden color. She had always been a good sport.

Della found Stella after a short search and quickly outlined what she planned on doing. Stella fell in with the plan at once.

The hydroponic tank they chose was long and wide. It was occupied mostly by tomato vines which sent down very little root and provided a thick protection of foliage.

They slipped into the tank and swam underneath the plants for twenty feet, then let their heads rise above the surface. There, sitting on the bottom of the tank with their heads concealed in the thickness of the dense upper growth of the tomato plants, they heard the insect people break in and capture their friends and relatives and carry them away.

They were puzzled about this. They knew that ordinarily the insects killed without taking captives.

Della shrewdly surmised that the insect men who had escaped the day before had described Jack and Arturo, and the attackers had been given orders not to kill because the men from the star ship were wanted alive.

When the noise finally died away and the cavern became perfectly quiet, Della and Stella left their place of hiding.

WHAT should we do now?" Stella asked, unconsciously acknowledging the leadership of Della.

"If we follow them we'll be caught and then we won't be able to rescue them," Della mused.

"Rescue them?" Stella echoed wonderingly. "Are you crazy? They'll be dead before the sun goes down today!"

"I don't think so," Della answered. "Have you ever been in love, Stella?"

"Well, now," Stella blushed. "I think Arturo is awfully nice. But I doubt if he would even look at me."

Della remembered the way she had seen Arturo look at Stella and chuckled.

"He looked at you all right," she answered tolerantly. "This is what I mean. Maybe I'm wrong, but I have a certain conviction that Jack and Arturo didn't drop out of the sky and come into our lives just to be killed the next day by the insect people. I feel that you and I are going to live to be the mates of those two men, too. The way things look right now, it seems hopeless. We know that if we follow them we'll be captured. We've seen the insect city from a distance, and know we could not possibly get into it undetected, let alone search for our people and Jack and Arturo. I've been thinking of the sealed entrance into the caverns. It doesn't matter now whether the insects discover this place or not. Let's try going that way. At least we don't KNOW we'll get caught that way."

The two girls crept warily through the rooms and corridors of what had been home to them since they were first born. At any corner an insect might be lurking.

Shortly they found themselves standing before the mysterious barrier to the underground. Although they had no way of knowing it, this place where they had lived had once been the underground built for the protection of the citizens of Oklahoma City in case of an atom bomb raid.

They were now standing before the entrance to the vast underground built secretly so long ago to house

their ancestors; hidden from the knowledge of surface men lest they, in their terror of certain death from the radioactivity of the atmosphere, destroy the orderly retreat and destroy not only themselves but all those who had been chosen to sire the future descendants of the human race on Earth.

This secret portal was a large concrete square exactly like those next to it in the wall except for a symbol to distinguish it. This symbol and the secret of opening the portal was a secret handed down from generation to generation by the underground race.

Della and Stella knew that behind that symbol on the concrete wall was a buried mechanism that would activate in response to an ordered series of raps, pulling the block inward and then sliding it to one side.

If they started the mechanism and the door opened, they would be completely vulnerable to any insect that chanced to be near enough to see it open. Secrecy had not been built into the opposite side because it had been necessary only to prevent the surface people from discovering the underground cities, not to prevent the underground citizens of humanity from leaving.

Della hesitated only for a moment. To go the way the insect people had taken their friends would mean capture. To stay where they were would mean loneliness and despair. This was the only way left open.

So Della gave the series of raps taught her and all other humans, and the two girls waited breathlessly as the section of the wall slid away and began to move to one side. They peered through the first narrow crack with wide eyes as the sideward movement of the wall began to form an

opening. To their relief there was no movement in the tunnel that they could see.

WHEN the opening had expanded enough for them to step through they leaped through, ready to dart back and run for their lives.

The tunnel stretched in a straight line running north and south. It was devoid of all movement. Where they had stepped through it widened into a parking area in which several cars were parked.

These cars were hemispherical with a flat base upon which rested seats which had been once beautifully upholstered, but which now were falling apart with age, the cushioning springs poking through the rotting fabric.

Rising from this circular platform which was perhaps eight feet in diameter was a plastic shell, hemispherical in contour, in which was set a single door of the same material with hinges and handle also of the same transparent substance.

The two girls had learned about these cars also. They knew enough about them so that in a few moments they were able to climb inside and get the thing going. A few experimental blunders that resulted only in mild bumps against the side walls of the tunnel enabled them to figure out how to run the car.

Pressing a green button on the panel in front of each seat (for the cars had control panels so that ANY passenger could operate it) raised the car mysteriously off the pavement so that it hovered motionlessly about six inches in the air.

A lever that slid in a slot on the panel regulated the speed, while a similar lever that slid sideways changed the direction of travel.

The bumps against the walls proved that the material out of which the car was built was still strong and elastic.

Della finally managed to get the car going moderately in the northward direction which would take them under the city of the insects where their people had been taken.

"We'll have to watch for exits," Della said as they slid along the tunnel. "Maybe we can find one that will lead right to where they are held captive. Then we could rescue our folks and Jack and Arturo and get away through this tunnel."

"I hope so," Stella said. "But I can't figure out why we haven't seen any of the insects. I always thought that they just swarmed all over in here."

"I know they used to," Della said slowly. The car was approaching a branch in the tunnel. "Be ready, Stella. We might have to shoot this car back the way we came."

She stopped the car even with the branch tunnel. It was much smaller. Barely large enough for the car to slip in. Twenty feet back it narrowed so that only a person on foot could continue. There was no sign of life of any kind.

"Let's explore this," Stella said. "I think it goes in the right direction."

She dropped the car to the floor and opened the door in the shell. The two girls stepped out. Ready to retreat at the first sign of movement ahead, they stole cautiously into the narrow passage.

Suddenly Della grabbed Stella's arm and stopped her. Then she pointed wordlessly to the wall. On it was the inscription denoting a secret opening.

Without hesitation she went through the rote of opening it. In-

stead of revealing another passage-way the door opened into a small room.

Inured though the girls were to death and signs of death, they drew back instinctively.

THE walls of the room were lined with shelves filled with a thousand things they had never seen before—curious looking portable machines and instruments. In the center of the room was a workbench upon which a glittering array of glass tanks and tubes and glass-walled gadgets rested.

Also on the bench was what had once obviously been a man. A human being. One leg was gone at the knee and the other almost to the hip. There was a large gap in his abdomen and another in his side. His face was gone. And from each gaping wound grew a densely packed jungle of evilly red fungus. Its unholy stems glistened in moist redness. Each stem ended in a cluster of microscopically small white dots.

Yet this is not what had made the girls draw back and stop breathing in horror.

Glass tubing led from the array of tanks into one side of the figure. In the tubing coursed a bubbly fluid of yellowish transparency. Yet this was not what had made the girls draw back.

Impossibly, grotesquely, the chest of the thing that had once been a man slowly rose and fell in the rhythm of breathing. It is alive!

"It's alive!" Stella croaked hoarsely.

The two girls stood motionless, their eyes unable to break away from the horrible sight. And suddenly into their minds beat a telepathic voice, clear as a bell.

"Yes, I'm alive," it said. "I have stayed alive though it meant a living hell, waiting for the time someone of my own race would open this room and I could impart the results of my work."

The rhythmic motion of the chest continued without visible variation. The evil vampirish fungus glistened hungrily as though it contemplated at tacking the flawless skin of the two girls.

"Close your eyes," the mental voice ordered.

It was almost impossible to do so, but finally the girls closed their eyes with a shuddering sigh.

"That's better," the voice said. "Now listen closely, because each moment of life is horrible torment to me, and for almost a century I have longed for this moment so that I could pass on my discovery and then die. Listen.

"When the insect race first broke into the caverns and began their slaughter several thousand of us who were highly trained in various branches of the study of life went off to ourselves—each to his own laboratory like this one, and began to work on the problem of defeating them. We all had different specialties and thus could attack the problem from every known angle. My specialty was cell genealogy—something that probably means nothing to you, for I see in your minds that the human race has lost its heritage and has now degenerated into small bands of people.

"One by one our cavern cities were discovered and wiped out by the insect hordes. Yet we scientists worked on, year after year. Finally we could no longer contact one another. We had to each carry on our work alone and without benefit of the others' experience.

"Before we scientists lost contact with one another we had decided upon the nature of the solution to the problem of destroying the insect race. Their mutation, we found, was not in the formation of the brain or its separation from the larynx, but in the activity of a certain gland.

"BY surgery we had determined that if this gland were destroyed in the pupa stage the insect creature did not develop intelligence but was just as his ancestors before the atomic age had been.

"My search was for a virus or germ that would attack this gland in the pupa stage. I won't go into the details of my work. It is sufficient that the details are written out in my lab book for anyone who has the ability to understand them.

"What is important right now is that on one of the shelves in this room are several bottles of virus I made that will ensure the downfall of the insect race. This virus is harmless to the human so long as he is not injured. If he is injured it sprouts from his wounds and becomes as you see me now.

"Find those bottles."

The voice stopped. Della opened her eyes and looked around, a new hope on her face. Something in the back of her mind—something not of her, seemed to be looking with her eyes. It seemed to whisper to her what each thing on the many shelves was. When her eyes came to rest on a shelf upon which were stacked several dozen small bottles of a transparent liquid she KNEW that they contained the virus.

"That is it," the voice resumed. "Now pull loose the tubes from the elixir tanks so that I can die."

Hesitantly, her mind seeming to struggle against every step forward, Della advanced to the bench. Her right hand reached out, the five delicate fingers trembling in indecision.

Her eyes turned to the horrible thing that had been a man. A great pity welled up in her blue eyes. With a sudden movement she reached out and jerked loose one of the tubes.

Slowly the sparkling fluid drained out to spread its stain across the dust on the table surface. After a time the rhythmic movement of the chest stopped.

As from a great distance a soft voice seemed to reach into her mind and thank her.

With hands that shook Della and Stella gathered up as many of the bottles as they could carry. Then they left, not bothering to close the door after them.

Outside Della paused, then deliberately broke one of the bottles against the wall. Its liquid content splattered and soaked into the dry dust. Della knew about viruses and germs.

The narrow tunnel continued in the direction of the insect city, so Della and Stella followed it. Gradually a soft murmur of noise ahead grew louder and more distinct.

The tunnel took a sharp turn. Stella, in the lead, drew back suddenly and held her breath. Della advanced cautiously. The tunnel ended at a small platform overlooking a huge cavern.

The cavern was several thousand feet across and at least two hundred feet from floor to the highest part of the dome shaped ceiling. It had once been some sort of auditorium for the cavern humans, but had been transformed by the insects.

In the center was a giant monstrosity of living flesh. It towered nearly to the roof. Its bloated body was topped by a head that was almost entirely mouth.

A raised platform had been constructed, leading to this mouth, and an endless string of normal sized insects carried food which they dumped into the greedily working maw.

Far below on the floor of the cavern another endless string of insects were carrying away an equally continuous string of identical, sickly white eggs.

This, then, was the queen of the colony. Something no human had ever seen and returned to tell other humans.

The two girls, their eyes wide, stared breathlessly, their minds almost incapable of grasping the monstrosity of what their eyes brought to them.

Their vantage point was a hundred feet above the floor of the cavern. Where the side walls met the floor there were dozens of openings from which insects were streaming and into which they were carrying the white pupae, to be carried to other parts of the underground to be stored until they hatched.

The stream of insects from one of these openings stopped. A moment later an insect different than the rest emerged. Its head was several times larger than the common run.

Two human figures followed it. The girls sucked their breath in sharply. The humans were Jack and Arturo!

* * *

Jack and Arturo stared at the insect man who was their captor and guide with incredulous amazement. He continued talking, unconscious of the effect of his words.

"Perhaps not the final race," he corrected himself. "Perhaps in times to come there will be another race arise which we know nothing of now which will supplant us just as we have supplanted the human. Perhaps in a few thousands of years we will be convinced that no other race of creatures could be intelligent as the human race has been convinced of their superiority up till now.

"We discovered references to past races in some of the books we uncovered. They were mostly pictured as human in form, some giants, others even non-material. The human spirit was pictured as incarnating successively in members of each of those races. We learned of the techniques of remembering past incarnations, and invariably when we followed these procedures we were able to remember when we were human."

"That interests me very much," Arturo said smoothly. "We have never heard of that before and, needless to say, it is quite startling to us. What is this procedure you use to remember past lives?"

"First of all," the insect man said, "You must keep uppermost in your mind the desire to remember those past incarnations. In that way your mind will work toward that end. Then when you are asleep you will have dreams. Some of these dreams will be very vivid and have intense emotional feeling. These are the first awakenings of those memories. If you can capture some of them and place them in time you can say that you lived about such and such a period in a previous incarnation, and as a citizen of such and such a country. Then you must study all you can find concerning that time and its customs and ways of thinking.

"Little by little the memories will come, so that eventually you can say you were a definite person of that time."

"And you personally can remember former lives?" Jack asked, hiding his amusement.

"Of course," the insect said quickly.

"Are you sure it isn't self-delusion?" Arturo questioned.

"Hardly," the insect replied. If his voice had not been almost expressionless by nature Arturo could have sworn there was a note of contempt in it.

He opened his mouth for a hot reply, then saw the look of amusement of Jack's face and relaxed.

JACK had been paying little attention to the attempts of the insect man to convince them he was their brother in spirit but more advanced on the physical plane. After the first startled amazement at the idea he immediately recognized the probable explanation. Just as a man who is perfectly healthy can actually become physically ill if he becomes convinced he is ailing, so those who become convinced they can remember former lives by dwelling on them eventually can do so—especially if they study all about the period in history and the customs of the people they DECIDE their "memories" tie to.

He saw the simple, obvious truth; regardless of any truth that might possibly exist in the statements of the insect man, the FACTS were that he was human and this creature was not.

HIS job was to find out all he could about the insect race and then get the information to the star ship. The insect race would have to be destroyed or it would eventually attempt to de-

stroy the human race on not only the Earth where it had almost succeeded but also on Mars and Venus in a devastating Holy War.

So he let Arturo carry on the conversation and concentrated on the details of everything about them as the walked along.

The city followed the pattern of human cities as he has seen them in movies on the star ship. The buildings were probable authentic reproductions of those that had existed here before the atomic destruction so many centuries ago. The design was obviously not too well suited for the insect people. Therefore the inescapable conclusion was that they were imitative to a very high degree. Perhaps they lacked the inventive faculty. If that were so they would be easily beaten in the long run, just as the imitative Japanese had been in the second world war.

Early in his youth Jack had read several books in the star ship library on insects. He recognized how the physical adaptiveness of the insect body was being used wherever possible.

The streets swarmed with the insect people. About one in every dozen or so had the large, bulging braincase. This type was obviously the ruling class—bred especially for their role. The rest had almost an infinite variety of special peculiarities designed for practical purposes.

One group was building a brick building. There was no scaffolding. Instead, each worker climbed up the brick face of the building wall. When he got to the spot where he was to lay the single brick he carried he would lick the spot, coating it with some glistening fluid; then tamp the brick in place.

Then he would join the line of those descending for another brick. Insects with bulging craniums ran back and forth where the construction was in progress, directing the workers where to lay their bricks.

IT looked like nothing more than the busy, instinctive activity of bees in the hive or ants in their hills as shown in some of the ancient films on insect life on the Earth.

If it were not for the fact that this race of bugs had nearly wiped out the human race on Earth, and the bug walking at his side was speaking the human language and expounding theories that had required intelligence to create, Jack would have been inclined to doubt that intelligence played any part in this hive of activity.

He recalled pictures of warrior termites with huge mandibles walking imperiously about in the masses of smaller worker termites. All came from the same stock, but the warriors were fed differently.

He recalled that with bees, the drones, queens, and workers all came from the same eggs, but were given different foods which made them what they were.

Undoubtedly diet in the pupa stage made the difference in this race of insects also. Perhaps in some underground place there was a queen laying an egg every few seconds, and a vast place where the eggs were stored while they hatched.

She might or might not be also the directing brains of the colony—for that was all it was. An insect colony in spite of the intelligence and the reproduction of human cities.

In any case, destruction of the queen, if one existed, was the great-

est blow possible against this single group.

Jack jerked his attention back to his surroundings. The insect man was leading them toward the entrance to the underground. This particular entrance had been made by the insects themselves, and was one of several similar ones.

An endless procession of workers went through this entrance and disappeared around a bend a hundred feet down the sloping shaft. Each of them was carrying three large sugar beets, thoroughly washed, but with the leafy top still intact.

A strange odor assailed the nostrils of the two men as they descended the sloping incline of the tunnel, following their insect companion. It grew stronger. In some way that seemed sinister and evil it excited their emotions.

Jack felt it reach deeply into his subconscious, drawing, bringing to the surface racial instinct and racial memories dormant for thousands of generations.

Pictures rose against his will in his mind; pictures of primitive ancestors creeping into the dark privacy of the steaming jungle to mate with beasts and less than beasts and sire monstrosities in the lust rites of ancient devil worship. His nostrils quivered in the anticipation of something—he knew not what, and feared to imagine. His mind turned upon itself in disgust and loathing.

He drew back, and an insect behind him snapped at his heels, forcing him onward. There was no light here. He prayed for light to blot out the images that rose to his mind.

A picture more horrible than the others rose before him. A "memory" of lustful embrace, serpentine coils

wrapped about him lovingly, caressingly; unblinking eyes of reptilian green holding his hypnotically; the slow, maddening rhythm of her swaying body causing his mind to reel in a delirium of ecstasy too intense for the mind to bear.

AND just beyond the range of consciousness the soft droning of the insect voice continued. What was it saying? It didn't matter. Nothing mattered. Ahead, somewhere, lay That which called to the very roots of his being—called with an invitation that could not be denied, yet which repelled with a loathing and revulsion which made Jack wish to kill himself rather than advance another step.

The Female embrace of the serpent changed subtly. The coils blurred into an unbroken surface of lecherous green and glistening, fungoid white. The caressing perfume of primeval Slime enfolded him, seeped into his being, saturated his soul.

He retched in disgust at his own response, and the retching became an overpowering feeling of lust fulfillment.

Still the insect voice droned on, just beyond the borders of consciousness. He tried to grasp it and hang on.

A part of his mind seemed to stand apart and watch the rest. In it was amazement and wonder. What was taking place?

Abruptly the darkness ended and he emerged into a large cavern. He glanced at Arturo and saw beads of glistening sweat on his forehead. Then he became conscious of the fact that his whole body was bathed in perspiration.

Though the light had banished the mental images the exhilaration, the

self loathing, and the insane ecstasy of every cell in his body was growing more intense.

A power reached into his mind and forced his eyes to look upward. He dimly perceived a huge, bloated body from the underside of which sausage shaped, white eggs were emerging in rapid succession.

His eyes seemed to have a will of their own as they continued slowly to rise. They came to rest far above on two huge eyes, motionless, metallic in their lustre. Yet in those eyes was the soul of all things Female, drawing, compelling. The Serpent lurked there, softly inviting. The unholy Lust of countless ages poured from those expressionless, honey-combed eyes in beams of intense, throbbing Joy. Woman was there, calling, inviting. Womankind of all past generations, collected and distilled until nothing but the pure Female principle remained.

Woman! Della. It WAS Della. How could he have been so blind! That was not some insect monstrosity. It was Della—gigantic, two hundred feet tall. She was there before him in all her unadorned loveliness, her arms held out invitingly, her red lips beckoning, her blue eyes caressing, her golden hair an ethereal halo about her head and resting on the white loveliness of her rounded shoulders.

With a racking sob of joy and relief he rushed forward to gather her into his arms.

In that same instant something flashed through the air above him. The illusion vanished.

For a split second he saw the real Della poised on a balcony set in the wall of the cavern. Then a surge of insects swept over him, bearing him to the floor.

"Della is here and in danger!" The words in his mind seemed to scream at him.

WITH a superhuman effort he rose to his knees, the weight of the insects trying to hold him down dragging at him. His space suit prevented their bone-hard mandibles from tearing his flesh.

With a sudden lurch he freed his arms and began lashing out with his fists. He felt and heard the sickening crunch as his fists hit home on creature after creature.

He had a brief flash of Arturo, his head flung back and a light of fierce joy in his eyes as he fought. Then he was too busy even to think.

His fighting improved rapidly. He found that these creatures weighed only about fifty pounds. Their heads were attached to their pipe-like necks by a loose ball and socket joint which pulled apart, decapitating them.

He settled down to seizing one insect after another by the head and swinging it around until its body pulled loose, falling into the forefront of the advancing horde.

It might have been minutes, hours, or days later. Passage of time had become a meaningless thing. Imperceptibly the attack of the insect horde began to change.

Where at first the insects advanced with clashing jaws and quivering antennae they now came forward slowly and seemed to freeze in a paralysis of fear as he reached for them.

Here and there insects were falling and lying still without having been touched.

Jack reached for the head of one that had stopped a few feet in front of him. As he reached he saw its eyes glaze in death.

He paused, swaying dizzily on his feet. His hand mopped the sweat out of his eyes and he looked around for more insects to kill.

The huge cavern was a shambles. Dead and dying insects in all stages of dismemberment were strewn about like some giant cataclysm had swept the floor.

Arturo had sunk to the floor, a nasty gash on his cheek.

"Jack!"

It was Della's voice coming from the ledge where he had glimpsed her. He looked up. Then he grinned crookedly and waved at the two faces peering over the edge of the balcony a hundred feet up.

There were pegs set into the smooth wall leading up.

Jack went over to Arturo who was trying to stand up. He helped him over to the bottom peg and started him upward, climbing with him and cradling him to prevent him from falling.

At the top Della's and Stella's hands reached out and dragged the two men to safety.

Then Della was in Jack's arms, crying and laughing with relief. His bruised, bleeding hands cupped her face and drew it toward him. Then she was kissing him, her tears of gladness cooling his hot face like the waters of a cool spring.

The bloated body of the gigantic insect queen had not moved. There was a large hole in the center of her nearest eye where the bottle Della had thrown had crashed inward. And the strange, intense mental power no longer glowed from those eyes. She was dead.

Jack stared at the repulsive thing for a moment, then shuddered and turned his back on it.

"Let's get out of here," he said curtly.

CONCLUSION

IT was two weeks later. The girls had shown Jack and Arturo the crypt where the cave scientist had been found, and Jack had taken the laboratory notebook containing the secret of the virus.

From it he had deduced what had happened to the insects that died without anything touching them. The virus attacked a gland in the insect body which not only was the cause of their tremendous growth, but also was vital to their daily energy consumption.

Their deaths had technically been insulin shock. The virus had taken hold rapidly and was spreading over the Earth in an epidemic wave.

Della and Stella had led Jack and Arturo back the way they had come. In the hemispherical tunnel car Jack had dressed Arturo's wound, sterilizing it and sealing it, hoping it would not develop the same fungus growth that he had seen on the body of the cavern scientist.

Back on the surface he lost no time in contacting the star ship and building a huge fire to mark their location.

Assured that the ship had seen the fire and would land as quickly as possible, they had hidden, waiting for it. Ten hours later the ship had come.

With reinforcements Jack and Arturo had returned to the insect city to rescue the people held captive there. The streets of the city were strewn with dead insects. It had been a simple task to break open the gates of the enclosure and set the people free.

An aerial survey in the star ship showed that the epidemic was spreading fast and striking without warning. The insect menace would be gone in

a matter of a few months at the rate the virus was spreading.

Dr. Crabtree had been one of the first from the star ship to set foot on Earth soil, overriding the vociferous objections of his two fellow Martians and the protests of the star people.

It was from his mouth that Jack heard the news of the straightening out of the misunderstanding of the Martians and Venusians concerning the star ship.

Two way voice-television contact had been established with both Mars and Venus, and continuous exchange of news and information was carried on.

Exhaustive tests had been conducted which proved that the atmospheric radioactivity of the Earth's atmosphere had dropped well below the danger level. C-14 content was still high and would shorten the life span of humans for thousands of years to come, but a normal life span of nearly a century could be expected and records proved that it would exceed the life span of their ancestors who had been thick on the surface so many centuries before.

Plans were already under way for recolonization of the Earth and exploration of the subterranean cities as well as rehabilitation of the wandering tribes of earth people whenever they could be found.

THOUSANDS of Venusians and Martians were clamoring for the opportunity to come to the Earth and colonize. Plans for construction of more of the star ships were being laid by the Martian and Venusian governments and their foundries were at work learning the process of making the stainless steel so vital to the construction of the ship.

Jack and Della sat on a rock near the bank of the river where they had first met. The sun had dropped beneath the horizon at their backs unnoticed by them, and now the stars were coming out, one by one.

The moon, already half way toward the zenith, looked down on them benignly from behind the scudding clouds. The bullfiddle strumming of a giant cricket came from far away, and over the tops of the forest growth could be seen the upper part of the star ship, like a second moon, where it rested at anchor just outside the insect city.

The two sat side by side, his arm about her waist, their forms blended into one in the darkness as it grew deeper with the coming of night.

Wordlessly he brushed his lips against her cheek.

"Just think, darling," he said softly, "for the rest of our lives we can come here, just us two, and watch the stars."

"You're sure you don't want to go up there?" Della asked hesitantly. "After all, that's your home—out there where the stars are."

Jack laughed briefly.

"Not a chance of it," he reassured her. "It can't compare with a sunset, or the blue sky of Earth, or the feel of a cool breeze and the realization that that breeze came from a thousand miles away, drifting under a topless roof of space.

"I made my choice centuries ago, it seems now, when Arturo and I went out to fix the radio antenna of the ship. In that brief time so many millions of atoms in our bodies changed their coats that we could not have returned to the interior of the ship if we had wished. It would have meant pollution of the rest."

"But here it doesn't matter. We're polluted already," Della laughed.

"That's right," Jack said. "But polluted or not, I love you, Della. Let's build a home right here on this spot where I first saw you."

"Right here," Della agreed. "But what of your friends on the star ship. Are they going to stay there? It would be so nice if they could join the rest of us and settle down here."

"They've about decided to settle on Venus," Jack answered. "Venus went through the same thing the Earth did long ago and is quite free from radioactive contamination now. There they will supervise the building of more and more star ships. Some of those may go out where we did and colonize some of the planets we found that are able to support human life. Someday maybe the whole galaxy will be dotted with Earths like this one, with billions of human beings on them. Maybe our great-great-great-great-grandchildren will be among those who settle on the planets out among the stars."

"Are there other peoples out there?" Della asked.

"I don't know," Jack said slowly. "You might say our whole voyage was like it would be if you stuck your head in just one of the tunnels near here and then were asked to decide if there were people on the Earth. There is so much space. And there were so many things we couldn't explain about our voyage. There are dark planets drifting in the void between here and the nearest star which could have millions of people living down under the surface where it wouldn't take much to keep it warm.

"Sometimes we were almost convinced that some of them were inhabited, but the gravity at their surface

was too great to run the risk of finding out.

"The universe is a strange place, and full of many strange things. But most beautiful of them all is the Earth, and the most beautiful thing on Earth is a girl by the name of Della."

With a sigh of contentment Della snuggled closer and laid her head on Jack's shoulder; and above, the stars looked down, twinkling, while from afar off came the muted sound of the cricket, strumming his bull fiddle note.

THE END.

THE RICHEST MAN IN THE WORLD

PERHAPS the wealthiest man on earth is his Exalted Highness, Osman, the Nizam of Hyderabad. He is the mightiest of India's potentates, ruling a territory the size of England and Scotland. Nevertheless he keeps himself on a budget of five dollars a week, and lives on a broken down porch with a goat. Osman has power of life and death over his subjects which number 17,000,000, but in all the years of his reign he has sanctioned only two killings. You would think a person of such means would wear diamond-studded turbans and gowns of gold with pearl buttons. But that is not the case with Osman. He is very modest and always in need of a haircut, wearing old shoes and homespun coat, and a turban that a slave would be ashamed of.

Osman is a faithful Moslem from way back to Abu Bakr, Mohammed's father-in-law and successor as Caliph. Osman's father rode on elephants and in the most elegant automobiles. He wore all the jewels he could carry, and the overflow were sewed into bags and used as doorstops in his fabulous palaces. After his father died, Osman closed the main palace and moved into a modest home in the suburbs of Hyderabad City. The Rolls-Royce set with jewels and bells, which was presented to him at the start of his reign, has rusted away in the garage. The royal elephants have not been used since the coronation. When Osman goes out occasionally, he uses an ancient old Ford. The whistles blow and police stop all the traffic, and a general hush falls over the entire city while the ruler goes by in his little old Ford.

He wears his clothes till they literally fall off his body. On one occasion he split his walking stick. The best store in town sent him a collection of canes but he sent them all back and continued to use his old one which he had repaired by putting a ring around it.

Osman takes in at least \$12,000,000 a year and spends only \$20 a month. Most of his fortune is in jewels. Some of the diamonds are as big as eggs and are used as paper weights. He once had his pearls taken out of storage to be cleaned and washed in a special solution to preserve their lustre. Then the pearls were spread out to dry, covering every roof of the palace compound. The idea of grading them as to size was given up because it would have taken too long. Osman owns the world's largest gold table



service. He has settings for 150 people. With all this wealth, Osman has no treasure house. Most of the jewels and money are kept in two buildings where he lives, protected only by an electric burglar alarm. Gold coins and bars and big chunks are piled up along the walls of what was once his bedrooms, and living rooms. The garages and even the parlor is stacked with gold. Many years ago a truck load of gold came into the palace grounds. There was no place to put the gold, so as a temporary precaution, Osman had a sentry posted to guard the precious cargo. The truck still stands there today, still loaded with gold with a sentry to watch it.

Osman is probably worth about \$2,000,000,000. He gets nothing out of his wealth except a collector's thrill. He wouldn't invest any part of his fortune because that would remove it from his sight, and he likes to spend many happy hours among his treasures. He has been pushed out of his house by his gold, and he lives on a cluttered veranda with his goat. He gets up at the crack of dawn and begins his reading or writing. At nine o'clock he and the goat eat their breakfast. By ten o'clock he is ready to discuss the business at hand. He sits on the steps while his ministers and courtiers stand around him in a semi-circle. The doctors report each day on the health of the harem, and there is little in Hyderabad that does not get a thorough going over. In the evening, Osman reads the Persian classics and the Koran, writes poetry and a newspaper column in which he discusses everything from cabbages to kings.

THE PIPES OF PAN

OF ALL the legendary and mythical creatures that Roman and Greek lore produced, none is more fascinating in an appealing sort of way than Pan, sometimes called Faunus. Usually Grecian legends are threaded through with an undertone of horror. This is not so with Pan. There is a certain sensitivity and tenderness about this wood-haunting creature that strikes us.

Pan was the offspring of Hermes and a wood-nymph. But what a child! He had the tail and feet of a goat, a crooked nose, horns popping out from his forehead, a goat's beard, and in general such a repulsive appearance that not even his mother could love him. His father however took him to Olympus where he so pleased the gods by his good-nature and his antics that they made him the god of fertility, calling him *Pan* because he pleased them *all*.

Pan loved to wander through the forests and the woods, rocky grottoes and mountainous haunts. Because he so loved music and song, he was always surrounded by beautiful wood-nymphs who delighted in hearing his music and watching his dancing, even though he was hardly enchanting to look at.

Pan fell in love with one of these nymphs, Syrinx by name, who scorned him because of his monstrous appearance. He pursued her so vigorously that she was compelled to flee him. At last he cornered her by the river Ladon. In desperation she appealed to the gods who took pity on her. Just as Pan was about to seize her, they changed her into a reed. Pan, love-sick and angered, sighed his bereavement among the reeds. The reeds swung to and fro in the breeze and emitted a lovely whispering, rustling sound that intrigued Pan and made his anguish less unbearable. So charmed was he by the sounds of the rustling reeds that he cut seven of them to different lengths and produced the wind instrument, the *syrinx* in memory of his lost nymph.

That enchanting legend is characteristic of the rustic nature of the god. The shepherds of the time attributed to Pan, the protection of their herds. Whenever inclement weather approached they sought shelter in the nearest caves lacking any formal pens. Consequently any grottoe-like or cave-like shelters were always dedicated to Pan.

Pan was the patron god of all hunters and it was customary for huntsmen to offer a propitiary sacrifice to the wooden image of the god before and after the chase. In addition Pan was supposed to have the power of prophecy. One ancient oracle considered him his special field, and told all who sought him out of the nature and desires of Pan.

The art-loving Greeks, fond of symmetry and beauty, could not long attribute to Pan the ugliness with which he had first been endowed.



Therefore, he is often shown in statuary and wood-cuts as merely a handsome young man, with the original goat-like attributes. Even the horns are vestigial, merely a trace showing. He is always depicted with a shepherds' crook and a seven-tubed syrinx. Later Pan was always associated with any unusual sounds that were heard in the woods. In fact, the word *panic*, meaning *fear*, stems from this source, the god's name.

Pan was also chief of the Satyrs, those wood-inhabitants who looked exactly like him. But they were more devoted to the purely earthy pleasures. Wine, women and song were their forte, and another word that we use commonly to describe orgies, originated in their name. We speak of a wild-liver as a *satyr*. It was the custom in the old days for the farmer-peasantry to deck itself out in goatskins, and under this cover, the protection of Pan and his satyrs, to perform all sorts of orgiastic rites. This was more regarded as a tribute to Pan than a violation of law.

The syrinx, the "Pipes of Pan" are well simulated in the horn portions of the famous Sixth Symphony of Beethoven. Walt Disney in his well-known musical cartoon "Fantasia" did a beautiful description to the musical accompaniment of the Sixth, of Roman Bacchus surrounded by Greek Pan and his satyrs and wood-nymphs. While the mythology was slightly confused, the beauty of what Pan stood for was adequately portrayed.

Dead On Arrival

Shammy Shay went on a glorious binge
and ended up stiff — as a corpse, that is . . .

SHAMMY Shay sat on a green refuse box at the corner of Clark and Madison Streets and surveyed the passing throng with a practiced, though somewhat bleary eye.

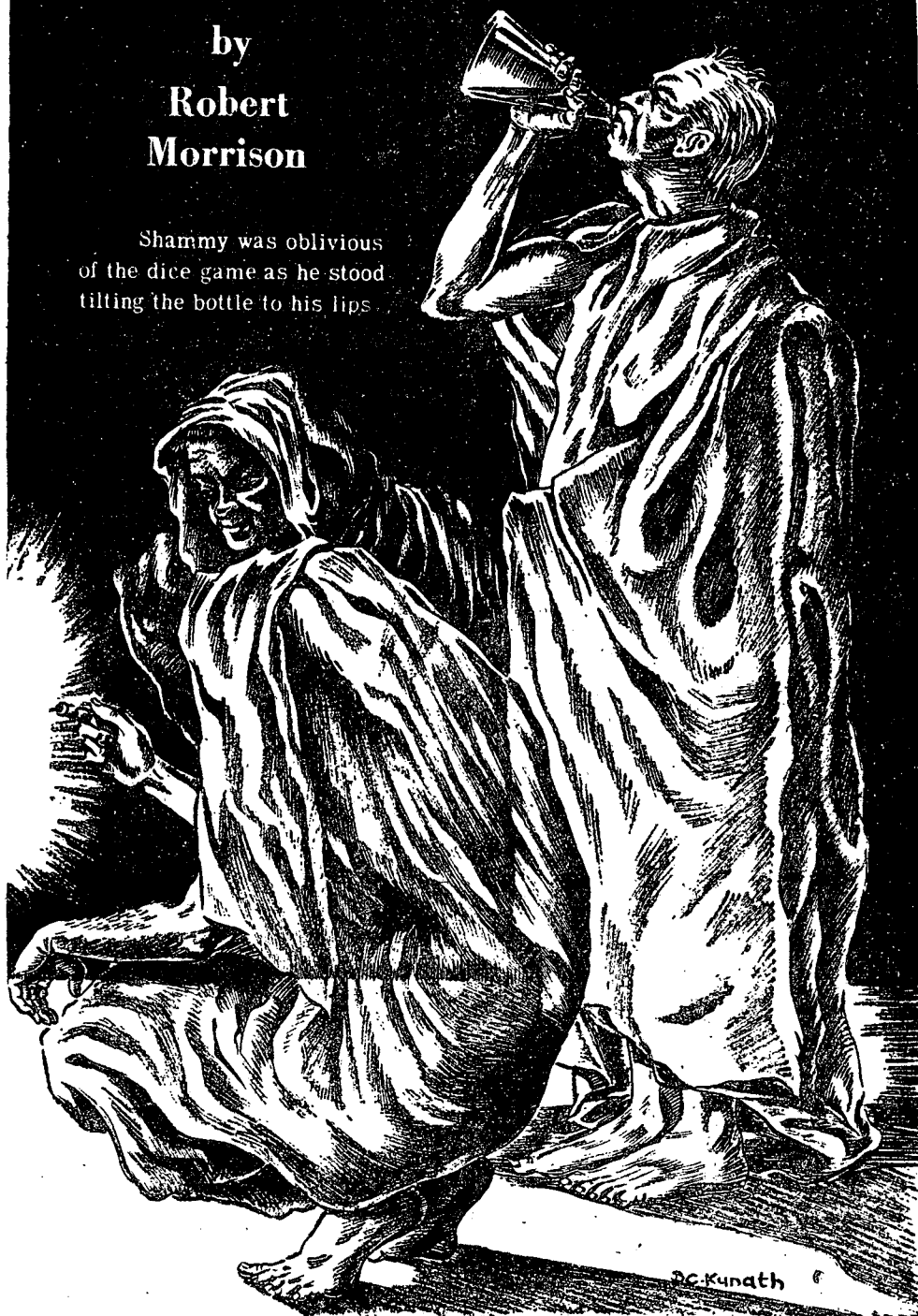
A battered derby was perched forward over his bulbous nose. His worn

suit was obviously many sizes too large, and his shoes were cracked and shapeless. Nevertheless, he leered out from under his hat brim with the kindly benevolence of a man who has solved all of life's problems in a very satisfactory manner.



by
**Robert
Morrison**

Shammy was oblivious
of the dice game as he stood
tilting the bottle to his lips.



Any one giving him a second glance might have put him down as an aimless bum. But this was not true. Shammy had a definite purpose. He was watching for some alighting passenger to toss away a currently useful transfer. This he intended to use to convey him to the door of his West Madison Street rooming house.

Technically he could not be considered a bum, either. He held a paying position as porter in Billy the Wink's bar, and hastened to his work each morning with commendable promptness.

What's more, he wasted no time after he got there. Pausing only to remove his hat and coat, he rushed back of the bar with mop and bucket. The fact that he slipped himself a double portion of whiskey—any brand, while the bartender's back was turned, is understandable. The whiskey gave the mop more vim and vigor.

It also aided in emptying the spittoons and polishing the fixtures. By noon Shammy was pleasantly aglow. By nightfall he was plentifully potted. Which may account for the fact that Billy the Wink paid him the phenomenally low salary of a dollar per day.

At last Shammy's patience was rewarded. A transfer fluttered to the pavement and he scuttled toward it just as the lights changed and the traffic surged forward. Suddenly the

world turned upside down with a good deal of clashing, clanging and squealing, ending in one loud crash.

Shammy lay in the gutter and slept peacefully. Indeed he looked as dead as the next fellow, who actually was dead. Neither was disturbed by the confusion and disorder surrounding them. There were two wrecked cars and six casualties.

An interne stood up after examining Shammy's companion, and said curtly, "Ticket D.O.A." Then he hurried away to attend a screaming woman whose most shocking injury appeared to be ripped Nylons.

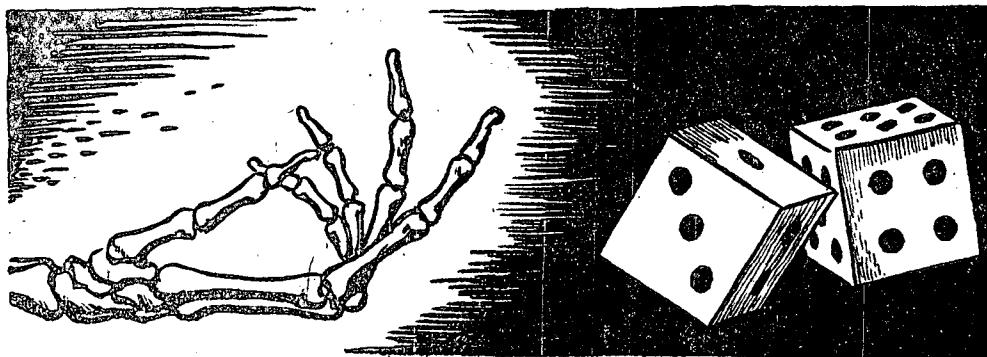
Shammy and his companion each got an identical ticket and were shunted into an ambulance and headed for the morgue with efficiency and dispatch.

Some time later Shammy woke with a chill. He pulled the sheet tighter about him and wondered where the blanket had gone. There was a scratching, grating noise and his bed appeared to be sliding forward.

"Whazzat! Who's zere?" queried Shammy indignantly. He tried to sit up and bumped his head.

When he opened his eyes again he saw a tall sheeted figure standing beside him.

"Oh, excuse me," said the figure. "I was just lookin' for a friend. You ain't seen Joe around, have you?"



"My head hurts," said Shammy.

"No, it don't. No sense—no feeling. You seen anything of Joe?"

"Joe who?"

"Joe Johnson. Friend of mine. I can't locate him anywhere. They must of moved him."

"Who must of—Say, what is this, anyway?" Shammy was becoming vaguely aware that he was not in his own bed.

"You must be new here. This is the jumpin' off place, brother. But you'll get used to it. Hey, look. My name's Al Cooper. The boys are havin' a little shindig across the alley. I can't find Joe. Let's me an' you go over. I ain't gonna spend all night lookin' for that guy, there won't be no drinks left."

At the suggestion of drinks, Shammy left his slab hurriedly.

"Hey, wait a minute!" he protested. "Where's my pants?"

"You won't need 'em," said Al. "Just grab your sheet. Come on."

SHAMMY was not one to question quaint habits. If Al and his friends preferred to wear sheets while drinking, Shammy was perfectly agreeable. He donned his sheet hastily and followed Al up a short incline to a wide steel door, hoping the Cops wouldn't catch them.

Al thrust his head out and reconnoitered cautiously before stepping into the alley. "Come on, an' make it snappy," he hissed. "It's that deserted loft building across there."

Shammy pattered after him hopefully and entered a dark and musty place. A rat scurried across Shammy's bare foot. He howled, tripped on his sheet and banged his head against the wall.

"Quiet!" Al hissed. "You make enough noise to wake the dead. Not

but what we ain't already awake—all except Joe."

"I don't think I'm gonna like it here," said Shammy dolefully, and bumped his shin on steep stairs. "Ow! I know I'm not gonna like it. This is no place to hold a—"

"Pipe down," said Al wearily, mounting the stairs. "I been dead for three weeks, an' I figger I'm entitled to a binge. If you don't like it, go on back an' crawl in the filin' cabinet. An' if you see Joe, tell him I was lookin' for him."

"I'm dead, too," said Shammy, groping his way up the steps. "I need a drink just as bad as you do. I feel like a truck hit me."

"Prob'ly did," said Al heartlessly, shoving open a rickety door.

A flickering candle was stuck in the middle of the floor and sheeted figures sprawled about the room in grotesque attitudes. A crap game was in progress in one corner. In another a grave-faced individual presided over a two-gallon glass jug of colorless liquid.

"What you say your name was?" Al hissed at Shammy.

"Shay."

"What?"

"Shay."

"Say what? Say what? What are you tryin' to say?"

"My name," said Shammy with a good deal of dignity, "is Shay—Shammy Shay."

"Well, why didn't you shay sho—Nuts!" Al paused and enunciated carefully, "Say—so—If Bat thinks we've already had a few, he won't pass the jug. Used to be a bartender, so watch yourself."

"I know quite a few bartenders," said Shammy defensively.

"Maybe so, but I bet they never

got shot up by a drunk like Bat did. I bet they're still—"

"Howzit, Al?" said a sprawled figure, lifting a languid arm. Where's Joe?"

"I can't locate him," said Al worriedly. "You suppose his old lady finally come around an' identified him?"

"Be just like her," said a round, huddled little figure dryly. "Just when he's all set for a binge. I'll bet she's got him boxed up tight."

"Why that old harpy!" said Al indignantly. "We oughta go out an' knock her house down."

"Not me, brother!" said the round little figure. "I don't mind telling you I'm scared. You won't catch me going where there's any live ones."

"Aw, you're just superstitious," Al said. "They can't hurt you—"

"Who's that with you?" the languid one asked. "He looks pretty fresh to me."

"This here's Shammy Shay, fellows," said Al. "He's new. He thinks he got hit by a truck."

"Glad to meet you," said the languid figure. "My name's Bill Burns—City Fireman. This fat bird here is Pete Gander. We came in together. He's the one started the fire. With a cigarette in bed—"

"Oh, drop it, can't you?" said Pete Gander petulantly. "Let's all go over and hit Bat for a drink. How about it, Shammy? Think you could stand one?"

"He looks pretty fresh to me," Bill Burns repeated. "You better go easy with him. That stuff's liable to knock him for a loop, and then Bat'll get sore and bust up the party."

"How do you feel, Shammy?" Al inquired anxiously. "Pretty fresh?"

"I'm dead," said Shammy firmly.

"Aren't we all," said Bill Burns in

a tired voice. "The point is, can you stand a drink?"

"I don't know what happened," said Shammy, "but I never needed a drink so bad in my life."

"The guy's all right," said Pete, scrambling to his feet. "Come on, we can't kill him."

BAT gazed at them morosely out of heavy-lidded eyes as they approached.

"Bat, I want you to meet Shammy Shay," said Al carefully. "He's new, but he wanted to help celebrate your going out party."

"Looks like a lush to me," said Bat somberly. "Where's Joe?"

"We think his old lady come an' got him."

Bat lifted one arm awkwardly. "The only reason I'm throwin' this party," he said coldly, "is so I could listen to Joe's stories. If Joe's not comin'—"

"He'll prob'ly get away later," said Al hastily. "You know Joe."

"He'll never make it," said Bat pessimistically. "Well, I'll pour one more drink—" His hands moved jerkily toward the glass jug and several cone shaped beakers.

Pete Gander huddled down close to the jug. "Need any help, Bat?" he inquired solicitously.

"You again!" said Bat disgustedly. "What do you do, have a drink with everybody that comes in the joint? Why don't you go lay down somewhere? Since when do I have to have help tendin' bar?"

"You got me wrong, pal," said Pete reproachfully. "I just came over here because I figured this new guy was going to open up with some stories. I figured that's why Al brought him, when he couldn't find Joe."

Bat's gaze swung bleakly to Shammy. "I like 'em smart," he said, "but

not too dirty. Well—what are you waitin' for?"

"There was a fellow," said Shammy desperately, "went into a bar an' ordered a scotch an' soda. While he's sittin' there, drinkin' his highball, a little guy comes in an' climbs up on a stool an' orders a beer. The little guy drinks his beer down an' hops off his stool like he's in a hurry. He goes over an' runs up one side of the wall, an' across the ceiling, an' down the other wall, an' out the door.

"This fellow puts his highball glass down real careful an' stares at the bartender. 'Did you see what I saw?' he says. An' the bartender says, 'Oh, that guy,' he says, 'don't pay no attention to him—he's crazy!'"

There was a dry rustle of subdued laughter all around, but Bat looked bleaker. "I heard it," he said leadenly.

"Come on, Shammy," said Al. "Let's have another one."

Shammy was bothered by a continuous buzzing in his aching head, and his eyes couldn't seem to focus in the uncertain candlelight. His tongue felt swollen and dry, but he launched manfully into another one.

"Did you hear the one," he said, "about the traveling saleslady an' the farmer's son?"

Let's have it," said Bat wearily, and tilted the jug over the first beaker.

The crap game had broken up and all of the weirdly sheeted figures had moved closer to Bat's corner as the beakers were passed around.

Shammy had finished his third story to the accompaniment of that dry, rasping chuckle when a beaker was placed in his hands. The beaker was cold enamel, but the liquid went down like molten lead, sending up fire and steam that threatened to blow off his

head. The dusky room tilted this way and that and suddenly started whirling madly. Shammy stopped breathing and hung on desperately.

Somewhere in the dizzy spinning he heard Al's apologetic voice. "He's new," Al was saying. "The first one's bound to hand him a wallop."

"Sure. I remember the first one I had," said little Pete Gander. "It was the night what's-his-name—that politician, was embalmed. Brother! What a brawl! They had to hold me down. I wanted to go out an' ring doorbells. I wasn't scared of anything that night. But the stuff don't affect me now. I could drink it all night—"

"That's what you think," said Bat coldly. "You're gettin' noisy already. You better watch yourself. I don't want two of you on my hands. I got to get back to the funeral parlor."

"Not to change the subject," said Al, "but howzit goin', Bat? They givin' you a good send-off?"

"The DeLuxe Special," said Bat with hollow satisfaction. "The Union sent a big white horseshoe an' hired three cars. A lot of other guys sent flowers, too. Customers an' wholesale liquor dealers. More'n I expected."

THE spinning room was gradually slowing down and Shammy relaxed a little and blinked his eyes. The fiery sensation of the drink had worn off. He felt instead a strange cold creeping over him. It seemed as though everybody was suddenly solemn—like people at a funeral.

Shammy tried to dispel the mood. "Did you hear the one," he said thickly, "about the—"

"Shut up!" said Bat heavily. "We're talkin' about my funeral."

"How'd the embalming go, Bat?" asked Bill Burns languidly.

"All right. They done a pretty good job. It's just left me a little stiff, is all."

"That's what they all say," piped up Pete Gander. "But then you can get around a whole lot easier, once you've been embalmed. Just whoosh through the air."

"It ain't as easy as you think," said Bat. "You got to get onto it. I made several bum tries before I got out to-night. Thought I wasn't going to make it."

That uncanny chill was going deeper into Shammy now as he peered about at the sheeted figures. To his blurred gaze their faces all appeared to be gray-white and expressionless. Along with the chill a horrid panic was growing inside him. These men were too quiet for fellows on a binge. Shammy himself was blind and dizzy from that one drink, but the gnawing chill kept him quiet.

There was a loud thumping sound from overhead, as though a hard object had dropped and bounded across the floor.

"What's 'at?" yelled Shammy.

"Pipe down," said Al calmly. "Old man Smith lost his head again."

"Head?" said Shammy fearfully.

"Sure. Hung himself about ten years ago an' now his head won't stay on. He can't rest so he keeps wanderin' around here all the time. Don't ask me why. He ain't sociable an' won't never join the party, but the boys always take a drink upstairs an' leave it outside the door for him. After he's had a few swigs he keeps losin' his head."

Shammy struggled with his befuddled senses. These guys were just clowning. This was their idea of a different kind of party. They probably belonged to a club of some kind and

he'd stumbled into it by mistake.

"I know how you feel," Pete Gander whispered in his ear. "You feel like ringing doorbells, don't you?"

"Why, yes," said Shammy in surprise. "As a matter of fact, I do. Let's—"

"Uh-uh!" Pete grunted. "It isn't safe. You'd be as scared of the live ones as I am if you hadn't taken that drink. That's how it gets you at first."

"What is it?" asked Shammy.

"Embalming fluid, you dope! What did you think it was?"

"I didn't know," said Shammy stiffly and rubbed his lips with the back of his fist. They felt numb. He felt numb all over. His head didn't ache any more. It was full of crazy notions, like ringing doorbells and busting windows and riding on the roof of an elevated train. He squinted thoughtfully at the glass jug. It appeared to be half full.

"I could stand another little jolt of that," he announced.

"Nothing doing," said Bat stonily. "I've seen guys like you before. A lush. You don't know when you've had enough."

"Aw, let him have one more little snort," said Al. "He'll get used to it."

"Not on my stuff, he won't," said Bat. "I ain't in no condition to handle him if he gets crazy drunk. I'm—Oh, there's Joe now."

Shammy's head turned with the rest. He saw a portly individual standing in the door, draped in a torn and dirty sheet.

"Did I have trouble," rasped the big fellow. "Ask me. Did I have trouble?"

"Your old lady?" asked Al.

"My old lady," said Joe. "She can smell a drink six hours before I take it. The only reason she didn't stop me

from goin' to that last binge us boys had, is because she was laid up with the Flu."

JOE advanced ponderously and picked up a beaker which he handed to Bat. "Give, brother," he said. "I got bad news."

"Spill it," said Bat, letting the liquid gurgle into the beaker.

Joe eased himself down in front of the jug. "I s'pose," he said, "all you guys are well plastered by this time. I hope you are, because—I ain't goin' to throw no party."

"I don't get it," said Al. "What's the gag?"

"No gag. It's on the level," said Joe sadly. "My old lady's so tight, she won't spend the dough for a burial plot here in Chicago. It's cheaper to ship me back to Missouri where we got a family lot in the cemetery. So-o, she figures why spend the dough for embalming. I'm bein' boxed up an' shipped out tomorrow. No fancy undertakin' for me."

"What a dirty deal!" said Al harshly. "There oughta be some way we can—"

"These ain't," said Joe. "I been figuring for hours. What makes me sore is she collects all my insurance, an' still she won't spend any of it on me. I guess I'm just a sucker."

"Wait a minute," said Bill Burns. "Was she alone when she identified you?"

"Sure. Sure," said Joe. "You think she wants anybody to know how cheap she is?"

"How did you get down here?" Bill Burns asked sleepily.

"Rode the 'L' all the way," said Joe. "I hitched on the back end."

"Okay. So somebody else can ride the 'L' back. There must be some guy here who's never going to be identi-

fied. If he takes your place, and she gets caught trying to pass somebody else off to collect your insurance—"

"Yeah, and suppose she don't get caught?" said Pete Gander dryly. "Then the guy that takes his place'll be just as bad off as Joe is now. I don't think you'll get any volunteers on that deal."

There was a murmured protest from the sheeted figures, as Joe handed back his empty beaker. The loud thumping overhead was repeated as old man Smith lost his head again.

"There's your answer," said Bat coldly. "If you can get him to do it, old man Smith is perfect for the setup. He can whisk himself out to your house without using the 'L' an' once there—"

"Yeah, yeah," said Joe. "He ain't nothin' but bones. If he don't scare my old lady out of her wits, he'll sure cause some comment when the guys come to box me up. I'm supposed to be fresh out of the morgue. Listen, Al, you go up an' tackle him. You always was a fast talker."

"I'll do my best," said Al, gliding away.

Shammy pulled his sheet tighter. He was getting colder and colder. He couldn't help feeling that these guys were carrying the thing too far. The beakers were being passed again and he watched blearily for one to come his way.

"Well, here's the best, Bat," said Joe, and quaffed deeply. "I hope you rest well, an' that reminds me of the fellow that was travelin' in the mountains. . . ." Joe set his beaker down and plunged into his story.

With a smoothness developed by long practice, Shammy picked up the beaker unobtrusively and emptied it, with the same fireworks he had expe-

rienced before. When the room had stopped whirling, Al stood in the doorway with a dim figure behind him.

"Old man Smith," announced Al, "is glad to oblige us. He says he's been tryin' to get out of this town for ten years, so he hopes Joe's old lady does send him down to Missouri. But if not, he thinks they'll at least bury him somewhere else, where he can maybe get a little rest. He don't like it where he's at now."

"Thanks," said Joe, reaching for his beaker. "Let's give the old man a drink on it."

THE room was still tilting crazily, but Shammy had presence of mind enough to slide the beaker toward Joe's fingers.

"He don't wanta come in," said Al. "He just wants to know where he's supposed to lay down when he gets there."

"Right in the parlor," said Joe. "There's a kind of trestle rigged up with boards across it. The guys are comin' back!" There was a sharp box. I guess that's all he needs to know—except I sure am grateful."

Shammy was staring at the doorway and the numbing chill was starting up again. The figure behind Al was swathed in a sheet, but below it he could see what should have been a foot, but wasn't. It was the skeleton of a foot.

Suddenly there was a shrill squawk and the skeleton foot jerked out of sight. "There's a live one in there," quavered the shrill voice. "I can smell him. He's alive!"

"Naw, naw," said Al soothingly. "It's just a new guy. He ain't been with us long. That's what you smell."

"I'm a-goin'," said old man Smith. "Let me out of here. I ain't never

comin' back!" There was a sharp rattle of bones, and he was gone.

"I hope he makes it," sighed Al, "without losing his head."

"Who's this new guy?" asked Joe suspiciously.

"Oh, yeah," said Al. "His name's Shammy Shay. He got hit by a truck an' I found him in your drawer to-night."

"Oh. He must be okay then," said Joe. "I thought there for a minute—"

"He's a lush," said Bat glumly. "I've had to watch him all night. Al shouldn't of brought him. He's too fresh."

"That's just what I said," declared Bill Burns. "And now if old man Smith don't make it to Joe's house, it'll be his fault."

"If old man Smith don't make it," said Joe, "It's gonna be this guy's hard luck, because he's gonna have to keep the date with those guys and their box tomorrow morning. You hear that, Bat? You can do me one last favor before you get planted. You can whisk out there an' see if old man Smith made it, an' if he didn't, I'll personally see that this guy does make it."

"You ain't tough no more, Joe," Al reminded him mildly. "You can't shove nobody around like you used to."

"Who says I can't," Joe demanded harshly. "You wanta see me try it? You wanta—"

Shammy shivered inside his sheet as the figures began stirring about him. He heard Bat's voice saying gruffly, "Quiet, Joe! Quiet, now. Don't start anything in here."

"I'll show you!" Joe replied still louder.

"Grab him, you guys!" rasped Al. "He's loaded. Grab him!"

Joe reached a huge paw toward Shammy as he cowered under the sheet. Cold fingers clamped on Shammy's face and were instantly jerked away as Joe let out a raucous yell. "Ah-y-e-e— He's a live one! He's alive! He's hot. . . ."

Shammy was on his feet, caught in a swirling rush of cold sheeted bodies. The candle was stamped out and Shammy felt himself being forced pell-mell down the steep stairs and across the alley in a blinding while of sheets. He was jostled about roughly, and kept stumbling and slamming against a cold wall. He was still stumbling about when he realized he was alone and very cold. This time the chill was not just inside him, it was all around him, and the place was pitch dark. He kept moving along the cold wall and suddenly his fumbling fingers found a doorknob. It turned and he dragged the door open to a lighted corridor where there was more warmth. He staggered along to an open door and stood there swaying.

THE two men inside the room were reading newspapers. They looked relaxed and comfortable.

"Where's my pants?" Shammy demanded thickly.

There was a loud clatter as the fellow with his chair tilted against the wall went down. The one behind the desk stood up trembling and moved his mouth without making any sound.

"Holy— Call the doc, quick!" gasped the fellow on the floor.

The next time Shammy woke up he was quite comfortable, but very thirsty. Somebody in a white coat leaned over and examined his head and carefully replaced an ice bag.

"I've seen 'em pull through with worse fractures," said the white coat.

"And I don't wonder he was raving about playing around with zombies. He played around all right. He must have been juggling corpses all night, the bodies were all mixed up. They're still going nuts over at the morgue, trying to straighten them out."

"That's what I can't understand," said another voice. "I've seen cases myself where a fractured skull put the patient in a deep coma, simulating death. But I never heard of one coming out of it in a couple of hours and engaging in all that activity."

"Probably the alcohol had something to do with it. They say he was plastered to the gills when they brought him in. He kept insisting he'd been drinking embalming fluid."

"You've warned everybody not to discuss this case?" inquired the second voice with authority.

"Oh, naturally," replied white coat. "And we can make the report look all right for our records. It's happened before, you know, that a body was picked up and mistaken for Dead On Arrival, and later revived. That part can be explained satisfactorily. There's just one thing that bothers me. He knew all about that Johnson woman's attempt to defraud the insurance companies. But how?"

"There must be some explanation. You say she called at the morgue yesterday and identified a body as that of Joe Johnson, her husband?"

"That's right. But that was several hours before this traffic accident took place. She had the body removed to her home with the alleged intention of shipping it to Missouri for embalming and burial. In some way that they haven't discovered yet, she disposed of the body and replaced it with an unrecognizable skeleton. A pretty dumb thing to do, but she probably

didn't know the undertaker's men who were sent to pack him up had full information and knew what to expect."

"They reported it immediately, of course," said the voice of authority.

"Certainly," said white coat. "She's under arrest, but keeps denying all knowledge of the skeleton. She insists she picked up the body of her husband, but of course, nobody believes her. What I can't figure out is how this fellow knew about it long before the undertaker's men discovered it."

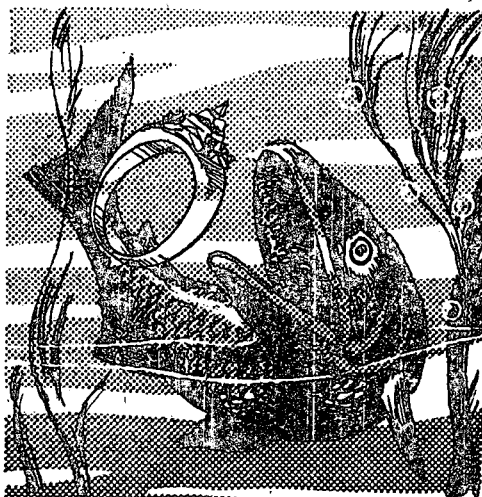
"Oh, there's probably a simple explanation for it," said authority complacently. "After all he was rampaging around the morgue all night. There

might have been some connivance on the part of one of the attendants, and he overheard something. Or possibly they were merely suspicious of Mrs. Johnson and he heard them discussing it."

"Yes, of course," said white coat moving on to the next bed. "There has to be a logical explanation, but it just seemed a little uncanny. . ."

Shammy remained perfectly still for a cautious moment, then slowly his hand snaked up to the ice bag and pulled it down to his parched lips. He sighed contentedly and went back to sleep.

THE END



ENCHANTED FISH

FISH occupy a persistent place among the legends concerning rings. This theme can be found in most all the nations of the past as well as present times.

King Solomon was supposed to own a ring, called the "Ring of Solomon," or "Solomon's Seal." According to the legend, every day at noon the ring transported Solomon into the firmament where he heard the secrets of the universe; this would explain his unfathomable mind and wisdom. It was set with an unusual stone which was also a magic mirror. In the mirror was reflected all the answers and questions of time and place and of people. But his personal wisdom must have failed him because he fell in love with a female prisoner, the daughter of a gentile prince

named Aminah. He even trusted her with the magic ring. The underground of Solomon's court knew about it so they had another man make love to the girl till he obtained the ring. Then, disguising himself as Solomon, he also changed the appearance of the ruler till his own courtiers didn't recognize him. Then for some time, perhaps forty years, Solomon roamed the earth while this inconsistent lover ruled the country. There was no justice during that time, and the king, downhearted and bewildered, turned to the trade of fisherman to make a living. The mighty lover who was ruling in the disguise of Solomon had a close call with the FBI of that period and put on wings and flew out to sea. Being so nervous and afraid, he dropped the ring into the waves. One

day during a particularly good run of fish, Solomon caught a very special fish. He slit his gullet and found in it the magic ring. So Solomon was able to return to his kingdom in all his glory, and all matters of justice were settled.

Another fish story so logical in its telling that some historians are inclined to accept it as fact, is in Herodotus's account of the ring of Polycrates, the tyrant. After Polycrates had obtained possession of the island of Samos, the powerful Amasis, then king of Egypt, became suspicious. So he wrote a note to Polycrates telling him that he seemed to be enjoying so much prosperity that it boded evil. He advised him to throw away some precious gem where he would be sure of never seeing it again, as a charm against misfortune. Polycrates was impressed with this strange advice, and boarded a boat and sailed out to sea and threw his emerald signet ring overboard in front of several witnesses. Then he sailed home feeling mighty low because of the loss of his beautiful ring. About five days later a fisherman caught a fish so large and perfect that he thought it would be nice to present it to the king. So he brought it before the king and said, "Sir King, when I caught this prize, I thought I should not carry it to the market, though I am a poor man that lives by this trade. I said to myself, it is worthy of Polycrates and his greatness, so I brought it here to give to you." Naturally the king was greatly pleased with all this oil, and he dined the fisherman and had the fish sent to the royal kitchen where the servants cut it open. They discovered the ring and ran to the king with the priceless gem. Polycrates was overjoyed to have his ring back and wrote to Amasis of Egypt telling him what had happened. Amasis was more sure than ever that evil time would come to Polycrates for he was enjoying such good fortune that even things that he deliberately threw away into the depths of the sea were returned to him. That ended the royal friendship. The last heard of the ring was that it was taken to Rome after the death of Polycrates, where the Emperor Augustus had it set into a golden horn and placed in the Temple of Concord among other golden articles of immense value. As to a fish swallowing a ring and later being caught, why should there be any logical reason to doubt the story. Fish, particularly mackerel, will swallow anything that glitters. And then some fish will swallow anything. This is also true of people.

The origin of the fish theme has bewildered historians of the past and also present day writers. The Apostles were fishermen and a Fisherman's Ring was worn by the Pope. But these facts do not explain much. Superstitions of rings have always existed. If they weren't about fishes they were concerning invisibility.

ABBOT TRITHEIM, who lived (1462-1516) in Spandau, Prussia, made a ring of a material called electrum, which was a natural alloy of gold and silver, and had the color of amber. It

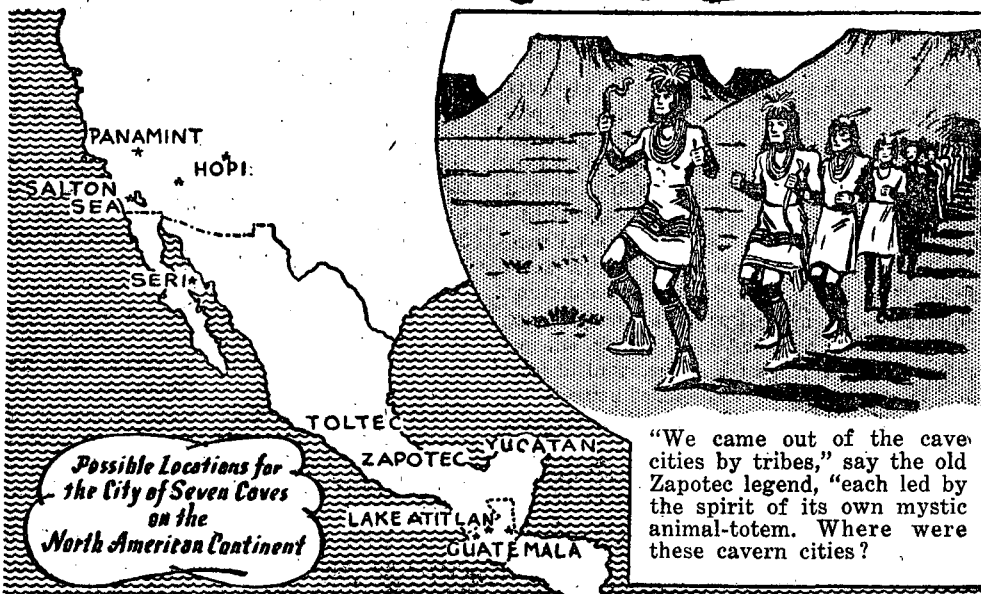
had the power to make its wearer invisible at will, but the ring had to be cast at the exact hour of the birth of the one intended to wear it. When the ring was placed on the thumb of the left hand, the wearer became invisible. Besides having this to its credit, the ring worn on any finger

Enchanted Ring 8os7on9

preserved the wearer from poison and let him know by changing color if enemies were in his presence.

The Mystic Ring of the Gyges concerns a ring set with a strange stone that could enable the wearer to disappear suddenly. There has been a great deal of disagreement as to the kind of stone in the ring. Some historians claim it was opal and others say it was a rainbow-hued specimen of iridescent quartz. Another says it was a serpent stone of India, since unusually beautiful stones were found in the heads of snakes that were crested and lived in the mountains of India. Gyges was a shepherd that was employed by the King of Lydia. He was romantically unhappy at home and longed to have a beautiful woman. So the story goes, during a violent earthquake the earth opened up and Gyges found himself on the brink of a deep, newly made chasm. He was an adventurous and inquisitive type of person, so he picked his way down to the bottom of the chasm and there he found, much to his amazement, a hollow brazen horse. There were windows on the side and of course he looked in. Inside he saw the body of a man laying on a couch, with a beautiful ring glittering on one finger. So he crawled inside and took the ring from the corpse and placed it on his own finger, then he hurried up the chasm and went home. Once a month it was the custom of the shepherds to get together and prepare the reports to be presented to the throne. Gyges, who had so much excitement in his mind, had previously readied his reports and sat among them waiting for them to finish so that he might tell them of his strange experience. While he sat there thinking and waiting, he kept twisting the beautiful ring on his finger. As he turned the jewel toward the inside of his hand a very strange thing happened. All the other shepherds looked in his direction and began speaking of him as though he had disappeared. So Gyges, experimenting, turned the jewel to the outside again and his friends asked him where he had been. He went home and continued with many experiments till he was sure of the ring's power, then he decided to carry out a very daring ambition. At the next meeting of the shepherds he asked if he might be permitted to carry the reports to the king. Once he was inside the king's quarters, he went directly to the queen's rooms. Before he knocked on her door, he turned the ring so as to make himself invisible. Then he entered her bed-chamber where he enjoyed himself to the utmost, and then went about to murder the king. After this deed he ascended the throne with the queen at his side, and they reigned happily, at times invisibly, ever after. This yarn belongs in an article on "fish stories."

SCIENTIFIC



"We came out of the cave cities by tribes," say the old Zapotec legend, "each led by the spirit of its own mystic animal-totem. Where were these cavern cities?"



The limestone shelf upon which Yucatan lifts her jungle above the sea is honey-combed with caves. Many of these were known to the ancients, and must have been far better known than today.



A miner who fell through an abandoned shaft, came upon a room in which were seated some mummies, covered with gold and jewels—brought back neither

The Santa Maria River near its junction with the Monagua, in Guatamala, is reported to flow underground. At the entrance of its channel are magnificent carvings beyond whose portal no native will pass. For this reason it has never been possible to explore it.



MYSTERIES

THE CITY OF THE SEVEN CAVES

By

L. TAYLOR HANSEN

WE CAME through the caves of the Underworld, where it was crowded, and where a bad people had driven us forward into the darkness," says the Pueblo Sage. "We came out by tribes, each led by the spirit of its own mystic animal-totem."¹

"Before the time of The Great Flood" say the Zapotec, "we lived in Cave-cities, but the power of the waters washed us out."

"Before the coming of the Toltecs" says one of the old authorities, "the people lived in caves, but great empires held sway then, and powerful monarchs ruled vast territory."

"Our forefathers came through the places of the cavernous openings which in your language might be translated windows," said the quippos readers of The Incas.

As one tribe after another raise their voices, the story of the "caves" becomes a mighty chorus.² At one time authorities thought this might have meant the cave cities of Arizona; but this theory has long ago been found untenable. With Dr. Douglass' new method of dating the old timbers, these sites may be considered as contemporaries of England's Camelot, which in the vast vistas of American pre-history, is as of yesterday.

Where is this City of the Seven Caves, this city which seemed to have been successively Serpent, Chichimec, Nahua, perhaps again Serpent and then stormed and taken by an allied Quiche power? Is it in the northern forests? Only one strange legend exists which might place it there. That is the story which speaks of cave cities existing in the high cliffs overlooking Death Valley and other similar valleys, cliffs which were once, without doubt, washed by the waves of the Great Inland Sea.

In Death Valley, as one stands across under the shadow of The Funerals and gazes up at the unscalable cliffs of the great Panamint Scarp which marks the sheer thrust of the East Sierran Rift Valley of which the sunken trough of Death Valley forms a part, it is easy to believe these wild stories, which the imaginations of old white miners have built from an Indian basis.

In this case it must be admitted that white men and not Indians gave us the fabric for the

wildest tales. From the daily paper in Los Angeles³ one may learn the details of a story which was carried to the University of California in 1929. A miner, trying very hard to obtain help from the University, promised that institution a share in what he found if they would help him relocate a lost city in the "caves" of the Panamints. He said that he came upon it while mining. He broke through a drift and fell into an abandoned shaft which led down an ancient carved stone stairway to a great door of stone which worked on a balance principle, being moved by the steady pressure of a hand. He was able to enter a room in which were seated some mummies. Although he claimed that the mummies were covered with gold and jewels, he brought back none to substantiate his claims, because as he said, he had been robbed, and so the University was not interested. This began a sort of Panamint Caves gold rush to which three persons, two men and a woman, added their share.

These individuals said they were returning to look for the "City of the Lost Caves" which the father of one of them was supposed to have found many years before. According to their story, which is embellished upon over many a desert campfire today, the caves had great stone quays, relics of the day when the ships of the ancients rode into the great openings. Needless to say, The Cave City of the Panamints has never been found.⁴

There is only one thread of a possibility which might lend credence to such a story. High up on the rocks of Salton Sea are tablets upon which are engraved a curious rune-like script. These are covered with a deep coating of travertine rock showing that the writing was carved long before the sea was that high, and splashed its salt water up against them. This old sea-level, or level of the ancient Salton Lake, is twelve feet higher than the present sea-level. If this was the old Inland Sea, it proves that man, and script-writing man at that, was here before the sea was drained and became the desert of today. (At present The Santa Fe, upon whose property the old engravings are to be found, is

¹A Hopi Legend.

²See *Ixtlilxochitl* and others.

³*Los Angeles Times*.

⁴See books on Death Valley for a more detailed account of same, especially "Death Valley Men."

making every attempt to preserve them.⁵)

Some authorities are convinced that the writings were covered by travertine from a freshwater sea. If that is the case, it may have been the Inland Sea because the old beach is so much above present level. On the other hand, should it prove to be an arm of the ocean, then we must skip the date back to some twelve thousand years ago to account for the change in ocean-level. The fish traps⁶ made to hold the water of the old tides in artificial pools argues for an arm of the Gulf. One scientist, however, not willing to admit this age for civilized man upon California's old coast, has suggested that they might have been the bases for houses. Yet he certainly gets himself into difficulties here also for they are covered with that same heavy coating of travertine.

Although Mexico is filled with legends of Ancient Chichomoztoc, or The City of the Seven Caves, such an actual locality is not to be identified with any place until one goes south. Then coming into Yucatan, one is entering the land of great natural caves. The limestone shelf upon which Yucatan lifts her jungle above the sea is honeycombed with caves.

Of these, without doubt, many were known to the ancients. In fact, we may take for granted, that like the top of the land, they were far better known and surveyed two thousand years ago than they are today. Some, like the ones partially explored by Stacy-Judd, are connected by popular legend with ancient carvings many miles deep within the bowels of the earth.⁷

It is here also that we begin to meet the legends that this ruined city or that one is far more extensively built underground than upon the surface. Such is the legend concerning the ruins of Campeche,⁸ Mexico, or of Palenque.⁹ In the Zapotec country again we find legends of vast underground caverns, and the additional legends of both Zapotec and Mixtec origin from seven and in one case from nine caves. It is also known that secondary burial with cave interment is practiced here. It is said that these caves, or some of them, were used as oracles, a description given to the earliest caves of the Quinames by the Nahuas,¹⁰ as well as some of the cave shrines of the wild Seri on Tiburon Island in the Gulf of California.¹¹ This might suggest that the cave complex was originally Serpent, and that both the two Mexican tribes of Mixtec and Zapotec as well as the Seri were largely Quiname in blood.

Thus it would again seem as if one of the characteristics which we would logically tend to connect with the Totem of The Snake, that is, respect for an Underworld, and a worship of The Cave, with a tendency to make shrines of caves and bury in them, as well as to build in them seems to be borne out in legend and culture traits.

Near Lake Atitlan where are the ruins of the Ancient Tecpan Atitlan, are the ruins of Patinamit

which is said to be the lost capital of the Cakchiquels,¹² whose totem was the Owl or Bat. Is it a coincidence that the name of this city is so close to the name for the great cliff scarp which forms the unscalable wall of the Death Valley Trough? Or that the Cakchiquel totems are in the demonology of the near-by Arizona and New Mexican Pueblo tribes?

Other fascinating regions as yet unexplored, to which the superstitious natives are unwilling to

⁵The tablets are upon the western scarp of the trough, above the Santa Fe tracks, and are carved in regular lines, the same character being often repeated. One of these is the 4 also the ☆ and the double cross †. These tablets were mentioned in my *Lords of The Underworld*.

⁶The Salton Sea Fish Traps are an equal mystery to the scientist, because they are formed of very large rocks which make a wall whose unbroken side is toward the lake. The obvious explanation that they were built to trap the fish during the outgoing tides involves the fact that we are supposing that man was present when this was a part of the Gulf and the sea-level was twelve feet higher than at present. See Jaeger in *California Deserts*. These traps are located below and to the north of the Tablets. I have been told that there are also some to the south, but I have not located the latter.

⁷See *The Ancient Mayans* by Stacy-Judd.

⁸Campeche has a curious little idol of clay which, reproduced by Bancroft in *Native Races, Antiquities*, presents a most startling likeness to the present costume and hairdress of the Hopi Indian, even to the necklaces worn by those people.

⁹The name of Palenque which is supposed to have been taken from the Spanish, and means "stockade," is particularly ill-adapted since Palenque has no stockade. The contention of the present writer is that the name is latinized from Xbalenque, the name of the hero of the Popul Vuh, since legend has it that Palenque is the city which he captured.

¹⁰The Nahuatl Legend says that after leaving the Capital of Tula, the Rebels sought the Oracle Cave of Culhuican for advice. Brasseur says that Tlaxi Colhuican, which is also mentioned by Ixtlilcochitl, was the Quiname Capital. Other names apparently suggested by old authorities for the same city were Colhuacan and Nachan (City of the Serpents) while Ghocan (Sculptured Serpent) is given in an old manuscript for Palenque.

¹¹The Seri will tell one that the main Cave upon their island gives forth strange lights and sounds, and is the home of a number of their gods, one of whom seems to be a memory of The Great Reformer.

¹²For more information on the Ancient Capital of the Cakchiquels see Reichardt: *Cent. Amer.* (Out of print.)

be guides, is the great cavern of the *Santa Maria River* near its junction with the *Monagua*, in Guatemala, where it is reported to flow underground. At the entrance of its channel are magnificent carvings beyond whose portal no native will pass.¹³ Or again, the cavern supposed to be located a few leagues west of Mixco, Guatemala (a fortified town up to the time of the conquest, and now returned to jungle), which is entered by a flight of carved stone steps, and which has never been explored over a couple of hundred feet, though the wildest tales concerning it are circulated by the natives.¹⁴ The Guatemala jungles are filled with legends similar to these, many of which, without doubt, must have some substance or basis in fact.

Thus in the Northern Continent, the Legend of The City of The Seven Caves, of which the

fabled Seven Cities of Cibola whose chimerical glory led the Spanish upon such a wild goose-chase, and which we must recognize as another cave echo, becomes for the modern investigator, no less chimerical. Perhaps in the future, when the interest of the American inhabitants, and the universities which must follow the interests of the peoples, turn to the rich and exotic vistas of the pageant of American civilizations, we may learn much more about the legendary City of the Seven Caves.

¹³See Hesse in Sivers' *Mittel Amerika* on the *Underground Channel* of this river. (Out of print.)

¹⁴Juarros in his *Hist. of Guat.* has the best account of this cave. (Out of print.)



THE MENTAL FEATS OF MOLLIE FANCHER

THE strange case of Mollie Fancher has been almost forgotten, but it was a national curiosity between the Civil and Spanish American wars. Men of science and clergymen, journalists and thousands of people visited her and made a hobby of studying her case. P. T. Barnum wanted to take her on tour with his circus, lying on a gold-plated bed. If she were living she would be just as famous today, for she could see although oculists had declared her blind. She could demonstrate her faculty for telepathy and clairvoyance, and at times she had five personalities.

Mollie had always been a lonely child. Her mother died when she was twelve, and she went to live with her aunt. When she was sixteen

she was thrown from a horse and struck her head on a rock. Because of this mishap, she was subject to headaches and fainting spells. A year later, she caught her dress as she was getting off a street car, and was dragged for a block. This caused a nervous shock and a spinal injury but she was not bedridden. A few months later she had convulsions, spinning around on her toes and then rolling on the floor and shrieking. This was the beginning of the strange case of Miss Fancher.

She was put to bed when she was seventeen and stayed there the rest of her life, over fifty years. Her first thirty years were the strangest. At the end of that time her aunt who was in constant attendance died, and Mollie's physical condition

became much better. Her legs were still paralyzed, but she regained her sight. As her physical condition improved she lost her mind-reading ability and her many personalities and became a normal invalid. Her sickness was a nervous disease called hysteria. She lost her speech, sight and hearing and was almost completely paralyzed. Many eminent physicians treated her without encouraging results.

She was completely blind. Her eyes were open and motionless. An oculist placed his finger on her eye-balls without any reaction, and he stated that the optic nerve was destroyed. But Mollie proved that she could see by extrasensory perception. She could read newspapers by putting her hands on them and books by putting them under her bed covers. She said her vision was not always the same, much depending on how she felt and on the weather. At times she complained that the top of her head was on fire with the influx of light . . . so much light that she could see all through the house. This form of vision without eyesight extended into telepathy and clairvoyance. Her uncle had left Brooklyn when she was only seven years old and had not been in touch with his relatives for twenty-five years. One day the door-bell rang, and Mollie told her aunt that Uncle Ike was at the door and that he was very ill. Just as Mollie had said, her uncle was at the door suffering from tuberculosis and he had come back from California to die among his relatives.

ONE time her dog strayed away from home and was gone for several days. Mollie felt very grieved but insisted that he would return. One night at two o'clock, she woke her aunt and told her that the dog was coming home but was still a few blocks away, and finally said that he was coming on the porch. The aunt opened the door

just as the dog was coming up the steps.

Prof. Pankhurst, an astronomer, gave Mollie a test which proved that she had extrasensory perception. He gave her a sealed envelope containing a passage from the published bills of the Maryland constitutional convention. He was sure that any part of the text was unfamiliar to Mollie or her acquaintances. She touched the envelope and told him that she could read the words "court" and "jurisdiction" and many law terms. The professor had never seen what was in the envelope either and was surprised when he opened it and found that she had "seen" correctly.

Mollie could also distinguish colors in the dark, tell where to find mislaid articles; and by touching a watch crystal she could tell you the time. She could describe the dress of a friend in another city; she could forecast a thunder shower by a couple days and could tell you when the fire bell would ring right to the minute. These strange feats of clairvoyance were accomplished while she was in a trance. She went into a trance nearly every day, in fact the first nine years of her illness were a constant state of trance. The day that this condition began, her doctor was there and told her that he was going home to a chicken dinner. Nine years later, when she came out of the trance, she asked the doctor if he had enjoyed his chicken dinner.

Three years after her nine years trance was over, Mollie developed five different personalities. Each personality had its own manner of speech, and separate interest. Each had her own name and age group. This condition continued for about sixteen years. After her aunt died, Mollie's physical condition became greatly improved. Her five personalities became one; her blindness was no longer total, and only her legs were left paralyzed. With all these physical improvements, her psychic powers left her.

THE WAVELENGTH OF A BASEBALL

THIRTY years ago, the phrase "The wavelength of a baseball" would have sounded ridiculous. Even today, to a person unfamiliar with modern physics, that phrase may not make sense. It smacks a little of "the Gostak distims the Doshes" or "twas brillig and the slithy toves." But today the wavelength of any moving object has a perfectly sound and legitimate basis. It is no more incorrect to speak of the wavelength of a golf ball than it is to say that red is a color.

It all stems back to a problem that haunted physicists for a long time and which hasn't been completely resolved yet. That is, what is the nature of light? We know that initially light was regarded as a flood of minute particles. Huygens then demonstrated the peculiarities of light that could only be explained on the basis of assuming that light was a wave motion in an hypothetical

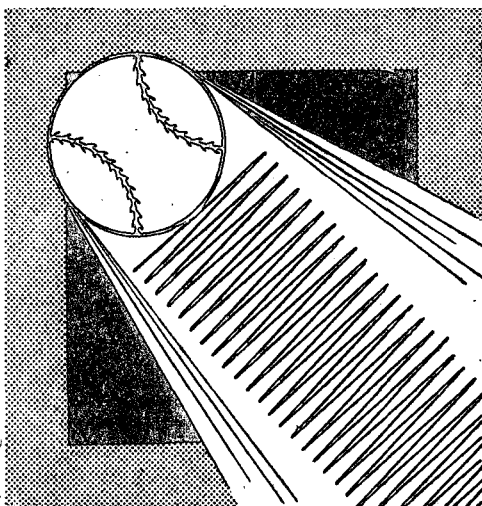
ether. But twentieth century physics came along and showed that, equally as much, light was required to have that original "particle" nature in order to explain other properties that it had. These particles were labeled "photons" and had the twin identities of a wave and a particle. For a while it was debated whether or not a photon should be called a "wavicle." It is now realized that however impossible it may be to imagine or mentally create a concrete image of a photon, it *must* possess both a particle and a wave-like nature. There is no evading this fact. Libraries have been filled trying to draw a picture that our limited minds can understand—usually without success. But this is the least of the problem.

One of the outstanding evidences of the wave-nature of light is the fact that when a beam of light passes over a small object (a pin or wire, for example) the shadow of that object is not

sharp but instead consists of a series of alternate light and dark bands caused by the interference of the adjacent waves of light. This behavior cannot be described by anything but the assumption that light is a wave. Consequently, regardless of whether or not we like it, we must assume that light is a wave motion. It can be just as easily demonstrated that light behaves like a particle too. We cannot worry about reconciling these two attitudes. We simply accept them.

ABOUT 1929 another peculiar phenomenon was demonstrated by two American physicists, Davisson and Germer. They were quite familiar with the diffraction patterns exhibited by beams of light passing over objects whose size was comparable with the wavelength of the light being used. They decided to see what would happen if instead of light beams they used beams of electrons. So they shot streams of electrons through a tiny hole in a sheet of gold leaf on the other side of which was a photographic plate. By elementary reasoning, by knowing that electrons (as everyone assumed) were simply tiny particles, it could be expected that the photographic plate would show a tiny dot where the electrons struck. But such was not the case!

Instead, the image on the plate was a tiny dot, surrounded by a series of concentric circles alternately light and dark, *just as if the beam of electrons had been a beam of light* and had produced a corresponding diffraction pattern! This was indeed astonishing news. First, light was shown to be a mixture of a wave and particle when it had always been thought simply a wave. Now electrons which had always been thought particles, also behaved like waves! Thus the dual wave-particle nature of all material things was demonstrated. The experiments were repeated with other atomic particles besides electrons and the same results were detected. The only requirements were that the openings through which the particle passed had to be of the same order of size as the particles themselves. In fact quite accurate laws were found to govern these requirements, and it



was found that a given wavelength could be associated with any given particle traveling at a predetermined velocity. This applied not only to atomic particles, but also to any object whatsoever, that moved! For example: a .22 rifle bullet moving at 32,000 cm. per second, has a wavelength of 10^{-24} Anstrom units (an Angstrom unit is a ten-millionth of a centimeter!) Obviously nothing small enough exists to permit the demonstration of the actual wavelength associated with the rifle bullet. But it *does* exist. And eventually there may be some indirect way of showing this, even though at present it seems inconceivable. The same thing applies to a baseball, or a train, or the earth itself. Each and every moving object in the universe has not only a given speed or velocity but also a wavelength. We cannot hope to get a nice simple physical picture of this wave connected with everything, but we still know it is there. And after the atomic bomb has been made a fact, who is to say that something relatively less startling may not be also demonstrated? "Don't throw that rock at me!—I'm afraid of its wavelength."

HEATING WITH REFRIGERATION

THE commercial electric power companies in the United States are looking forward to a great period of expansion, not only because most American homes have so many electric gadgets in the house, but because it looks like a lot of homes are going to be heated by electricity. This is not quite true—they're not going to be heated directly by electric current, but they're going to use a good-sized electric motor in a lot of heating plants. What has a two or three horsepower electric motor got to do with heating a house?—it's simple.

If you've ever examined an electric household refrigerator, you may have noticed a peculiar

thing. The cooling coils in the back of the machine are quite *hot*. We're not speaking of the heat due to the electric motor—we're referring strictly to those tortuously-wound copper coils that carry the refrigerating fluid. Where does that heat come from? From the interior of the refrigerator of course. When you take heat from one place—the inside of the electric refrigerator—you have to transfer it to another place—the outside of the refrigerator. A considerable amount of heat then is delivered even by a small household refrigerator. This heat is usually unwanted because all that it does is warm the kitchen. This is fine in winter—but it's too hot

in summer.

In recent years a number of inventors have noticed this and thought about using the heat generated by the refrigerator in a practical manner. Using a large refrigerating system, they reasoned, operated by a two or three horsepower electric motor, it should be possible to get enough heat from the cooling coils to heat a small home. The catch is, of course, where are you going to put the refrigerating coils to pick up the heat in the first place? You can't get something for nothing. There must be some place from which you can pump the heat into the house. There is such a place.

When you dig down into the earth, it is found that the temperature rises. This is true all over the country even in the high latitudes of the northern United States. And you don't have to go down so very far. From fifty to a couple of hundred feet beneath the surface of the Earth all over the country, the temperature is in the neighborhood of between sixty and eighty degrees. Fine! Here is our source of heat.

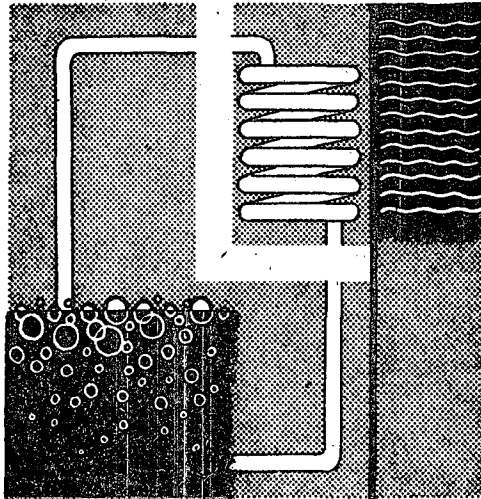
Before we describe the exact operation of the system it is wise to point out that this is no vague theory. This is fact. A hundred or more of these installations exist all over the country. The electric companies are doing a lot of research on the problem. A number of private homes have been equipped with the heating machines, and they are working perfectly. It won't be long before they are on the commercial open market.

The system requires a typical refrigerating set-up of a fairly large size, that is, a compressor operated by an electric motor of a couple of horsepower. To the compressor are attached the conventional refrigerating coils and the cooling

coils. A pipe is sunk into the earth, for say, a hundred feet. The compressor pumps the compressed cooling gas down this pipe where it is turned back into a gas by the high (relative) temperature of the surrounding earth. The gas then flows back to the compressor where it is re-compressed and again sent down the pipe to pick up more heat. In the process of being compressed however, it gives up its heat—this is the heat that it picked up from the earth below—this is the heat that we want. This heat is then circulated through the house usually by a hot water system. Actually the hot water system is taking its heat from the cooling coils of the refrigerator. And more than enough heat can be gotten from the earth depending on the size of the system used. It is economically sound, too.

The whole set-up is nothing more than a conventional refrigerator. In a refrigerator for the house we take the heat from inside the box and transfer it to the outside of the box, e.g., the cooling coils. Similarly in one of these heating systems, we take the heat from inside the earth and transfer it to the outside of the earth, e.g., the cooling coils of the refrigerating system located in the house.

This set-up is more properly called a "heat-pump" because that is really what any refrigerator is; it pumps heat from one place to another. The nice thing about it is, that we're getting our source of heat for nothing—the earth has more than enough to spare. Someday this system is going to be used on a lavish scale. To that end engineers are working like mad to work out the details. The only power that we need to supply is that to run the electric motor—and that is a lot cheaper than the average amount we spend for coal, or oil, or gas. It won't be long!



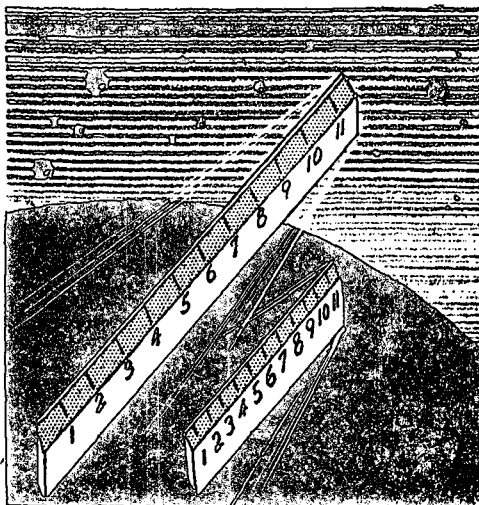
IF BY "fantasy," we mean something unusual, out of the realm of ordinary experience, not conventional—then, some of the most abstruse scientific theories can be classified there. Consider that catch-all of modern science—relativity. Probably more has been written and discussed popularly about this difficult and hard-to-conceive subject than any other. And that is undoubtedly why it is so popular—its difficulty makes it attractive. The basic observations that gave birth to the subject of relativity are as old as Man himself, and yet the way of looking at them, is as new as tomorrow's automobile.

When Sir Isaac Newton brought forth his observations on the behavior of light, he made one of the greatest contributions to science that we have ever known. But all his thinking was concerned with the experimental aspects of the subject. He had very little to say about the actual nature of light. He didn't dare. How could he talk about the nature of something that he was only beginning to understand? He could describe how light behaved but he couldn't say what it was. He ventured a suspicion—nothing more—that light was something like little bullets, "corpuscles" he called them, shooting into our eyes. But that didn't explain all the unusual properties of light, so another physicist, Huygens, suggested that light was more of the nature of waves than particles. This was immediately taken up by the scientific world and declaimed to high heaven. The idea persisted to modern times.

When Huygens talked about "waves" he went into great detail as to just how they reacted with each other, giving diffraction and interference effects and so on. He built up a monumental theory that seemed to be completely supported by all that was known at that time. For a long time, no one, not even Huygens, ventured to suggest just what light waves were. Then after a time it became the fashion to say that light waves were waves in the "luminiferous ether." It was explained that this ether was the stuff that filled all space even to the interstices between the atoms. It existed everywhere though it could not be directly detected. But never was it clarified completely. "Ether" was a catch-all bogey.

Then at the beginning of the twentieth century things were discovered about light that simply could not be explained by this "wave-in-the-ether" theory. Besides someone went through the trouble of calculating just what the ether would be like to be able to transmit light waves just as water transmits water waves. They got some surprising results. It, the ether, would have to be as rigid as steel, yet more resilient than anything conceivable! Can you imagine that this idea was clung to for so long? If this stuff filled all space, how could the planets go through it without being stopped, and why wasn't light slowed down or speeded up by this stuff dependent upon whether the light was going with or against the necessary streams of ether that must exist?

The Michelson-Morley experiment finally



showed that no such thing as the ether could exist. Everyone is familiar with the experiment. Beams of light were sent with and against this so-called stream of ether. No change in the speed of the light was detected. The "ether" was out.

Then Einstein started to think on the problem and, while he is no more able to give us a physical picture of the nature of light we have discerned some astonishing things about it. For one thing: it is the absolute, the only absolute, thing that apparently exists in the whole universe. The speed of light is the one thing that is constant, regardless of how fast or slow we are moving with respect to it. That gives rise to some incredible paradoxes which at first made most orthodox scientists shudder to even consider. Because light has a constant velocity, relativity asks us to believe that whether or not two things take place simultaneously, can never be determined! It also, ask us to believe that length is no longer a constant. A thing which is moving is of a different length than that same thing when at rest. All this causes us to view ourselves in a radically different light—no pun intended. Common-sense reasoning goes out the window. We have to accept apparently contradictory explanations of things in order to have a consistent system or physical picture of our world.

Now that science, physics, and particularly relativity has shown us that it (light) is possessed of a Jekyll-Hyde nature—it is both a wave and a particle—we think that we have satisfied our knowledge. Not so, for no one, not any scientist, can dare to attempt to give us a real, physical image of light. We are just back where we started. What is light? In terms of familiar images, in terms of things we understand, what is the real nature of the stuff? No one can answer.

* * *

EGYPTIAN SOCIETY

IN ALL things the ancient Egyptians were influenced by their religious beliefs. There was a complete and involved linkage between their everyday life, their government, their customs and the manners of their society. Even their king was regarded as a god to be adopted into the society of the regular gods upon his death. The Egyptian word for king, "Paraoh," is in reality a Hebrew word, coming from the Egyptian "Pero" meaning "Great House of the Gods." Before each pyramid was constructed a temple in which the buried Pharaoh might be worshipped after his death.

A rigid court etiquette was developed by the Egyptians, an etiquette even more rigorous than that of the Asiatics or our own modern princely states. There were all the noble ranks of the royal household from the princes of the court to the chamberlain. The Pharaoh's slightest needs were administered to by separate appointees who saw that he lacked nothing and who were arranged in strictly ascending and descending ranks.

Though the Egyptian Pharaohs had numerous wives after the manner of a harem, the favorite wife was the official queen. Wealth beyond imagination surrounded and was possessed by the royal house. A prince of the court of King Khafre in the Fourth Dynasty owned *personally*, an estate consisting of *fourteen* towns, plus residences in the royal palace, plus twelve wives, plus incalculable wealth in the form of jewels and gold!

While the Pharaoh was a god, he still maintained intimate relations with the members of his court. And it was his custom to bestow personal favors upon his favorites. For example, it was *not uncommon* for him to give a lovely princess to a boy whom he may have gone to school with in his youth, or he might proffer a huge estate to anyone that he liked.

There was no limit to the Pharaoh's power. He had the right of life and death over any of his subjects, regardless of their position. As time went on, this power lessened, but in the early Dynasties this was absolute. It is recorded that Khafre, of the Fourth Dynasty, ordered the destruction of seven thousand people of the town of Set-an, for their failure to promptly remit a tax that he had ordered levied. When the sentence was pronounced, an army of forty-thousand soldiers, most of whom were Nubians, was dispatched to surround the town. Then, closing in, without mercy, the soldiery proceeded to butcher the inhabitants of the town, from the infants to the oldest adults. The slaughter was horrible. An ear was cut from each victim as proof of the ghastly deed.

Very rarely though were such drastic measures resorted to; in fact, on the whole, the Pharaohs were remarkably just, and even the poorest peasant could often gain justice by appealing to the special courts set up by the Pharaoh.



While the Pharaoh maintained no regular standing army, he did have a personal army attached to him and which was used for purposes such as have been described. In time of serious war, each territory supplied men, and the government levied militia groups from the temple priests (who kept private armies) and also from the nobles. The result was that there were always sufficient numbers of the military available even though a regular army did not exist. Because the Pharaoh was so closely linked with the gods, revolt was not possible—in fact, it was unthinkable. Occasionally minor riots would ensue which would be quickly suppressed by any one of the numerous sources of armed might.

It was to the interest of the temple priests to support their Pharaoh. Consequently, they could always be relied upon to support his actions. As for the people—their veneration of their ruler was so great that they had little or no reason not to conform completely with his wishes. And because Egypt was so vast and fertile, famine and drought, the great breeders of revolt, did not occur. It was no accident that Egypt became the mighty empire she once was. Nor was it accidental that the Pharaoh had practically no problem in dealing with his people. He was venerated too thoroughly for that.

BURIED ALIVE FOR THE QUEEN

WHEN death took Queen Mer-Neith, wife of Egyptian King Djer, 50,000 years ago, it also cost the lives of twenty-three devoted men and women who were her slaves. All that remains to tell the story of this human sacrifice are the yellowed bones of the victims that were found in the two story tomb of the queen. They were discovered not so long ago by a British archeologist during excavations near Cairo. It was their ancient barbaric custom of pagan worship and their belief that after death men and women continued to live the same kind of existence as they had on earth. So kings and queens who were accustomed to having many people to wait on them thought that they would need an equally impressive retinue in the great hereafter. So without the slightest conscience over snuffing out the lives of their servants, they issued orders to have the most helpful servants buried with them in their tombs.

We will never know for certain just what took place the day that Queen Mer-Neith died, but fragmentary bits of Egyptian history gives us a few hints that it may have been something like this: The young King Djer, who had been ruling since the death of his father, mourned the death of his mother with dignity suitable to his rank, and the subdued sound of weeping could be heard throughout the palace. The queen's ladies-in-waiting were flitting about hysterically saying their last fond farewells. The queen's favorite male servants also stood around, watching furtively while the chief steward selected special wines to be taken from storage. There were twenty-three chosen for the sacrifice and they all knew the purpose of this wine. They knew that they were to be stupefied with it so that there would be no last minute backing-down to this idea of being buried alive. Perhaps there was also some special sedative added for it is known that King Djer wrote several medical treatises and no doubt his son knew some of his medical lore.

The cruelty of this ceremony seems to have been mostly mental. In Nubia, at a later date, there is evidence that the people that were to be sacrificed at royal funerals had their heads bashed in with clubs. According to the traditions of the First Dynasty, the queen was laid in a deep red coffin, and had jugs of beer and wine and supplies of food piled around her. Her favorite furniture, combs, cosmetics and jewelry were buried with her. Probably the insensible attendants were carried in after the queen's body lay in state.

IN THIS period of Egyptian history the art of embalming was just being introduced and experimented with. Queen Mer-Neith was probably treated with simple preservatives and no doubt her servants weren't embalmed at all. She was comparatively conservative in her number of attendants she required for her next existence. Her



husbands cenotaph in Abydos is surrounded by seven rows of tombs of his household, totaling three-hundred and thirty-four graves. These included all his royal harem and many of his court officials. The queen's attendants were also surrounded by the materials that they would need to serve their mistress in eternity. Near the bones of one was found pots of paint, another had small boats, and another with small chisels. The queen's body was missing when her tomb was opened, and her jewels had been stolen by grave robbers more than two thousands years ago.

The savage practice of live burials started in predynastic Egypt, before there were any kings. In those days, the custom applied to chieftains of small districts. Egyptians weren't a naturally blood-thirsty people, and human sacrifice soon became repulsive to them as civilization advanced. For a time wax dummies were used for the reenactment of the sacrificial ceremonies. Later wooden and stone figures representing the servants were placed in the tombs with the idea that they would come to life at the right time to perform their duties.

Wall paintings of sacrifices appear in tombs long after the custom was out-moded. Some murals showed hunting scenes, fishing or harvesting activities. It was apparently believed that a painting of the work to be done was the equivalent to doing it.

Although human sacrifice was discontinued in Egypt, it was still practised among other early civilizations. In the fifth century A.D. Attila went to his grave accompanied by a host of soldiers with their horses, and also by his bride who is supposed to have stabbed him on their wedding night. Some late excavations in Maya burials near Guatemala City show that early Americans buried slaves with their masters, too.

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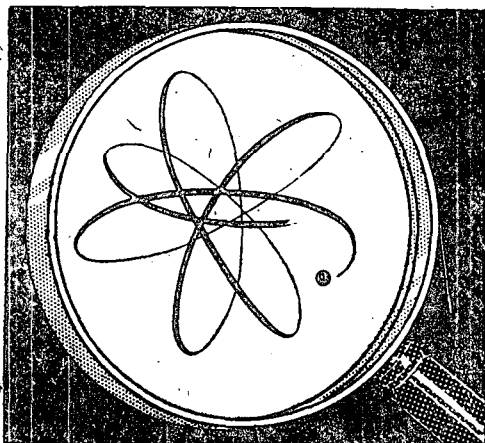
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WANNA SEE AN ATOM?



IN THIS day of the Atomic Age, impressive statements and figures are tossed around without much regard for the simpler things. In newspapers, books, and magazines, the names of atomic tools and instruments are flipped at us until we can hardly remember that after all the atom is the important thing. Cyclotrons, betatrons, Geiger-Muller counters, electroscopes and a thousand other strange devices assault our eyes and ears until we reach the point that we fail to recall that we're primarily interested in the atom—not the tools used to work with it.

It is a well-known fact that the atom is too small to see. The physical dimensions of the atom are less than a half wave-length of visible light—even violet—and consequently, human beings can never hope to see an atom—directly. There are ways, however, that permit us to get a glimpse of something that satisfies us. Because we can never see the atom, we have to be satisfied with the effects that it produces. Instrument

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can be designed so that they will show us the effect of one atom on another. And it isn't necessary to have a power plant the size of Boulder Dam to do it, either. Nor are any elaborate machines necessary. A long time ago, before nearly as much was known about the atom as is known now—around the turn of the century—an English physicist by the name of Sir William Crookes invented a very clever and simple apparatus for showing the effects of atomic disintegration. The name of the device he used is more imposing than the instrument itself—it is called a *spintariscopes*.

All it consists of is a small screen of zinc sulfide, a tiny speck of radioactive material like radium chloride or radium bromide from a luminescent watch-dial, and a lens. If the radioactive material is placed near the zinc sulfide screen and observed through the lens, hundreds of flashing, scintillating sparks will be seen. If the quantity of radioactive material is small, and it usually is, the flashes may even be counted. What the eye is seeing, each time it sees a flash of light, is the destruction of an atom! Radioactive materials are constantly throwing off three types of particles, alpha, beta, and gamma. The first, is the nucleus of the helium atom, a helium ion, the second, is a high-speed electron, and the third is a photon of x-radiation. When any one of these sub-atomic particles strikes an atom of zinc sulphide, they disrupt that atom and cause it to emit a photon of visible light. We see this as a steady series of light flashes. We are actually witnessing the break-down of atoms.

When first examining such a scintillating screen the first thought is that one is witnessing a meteoric shower. The analogy is heightened by the fact that the background is jet black. By itself the eye is not such an amazing thing—but when it is backed up with the power of the mind, the realization of what is happening on the zinc-sulfide screen is truly shocking. Actually most luminous watch-dials are in effect spintariscopes. All that is necessary is to take the watch into a completely darkened room. Allow the eyes to acquire their maximum sensitivity for ten or fifteen minutes and then examine the watch face through a magnifying glass as before. The same phenomenon will be observed.

As is often the way with natural phenomena, the most profound things can be seen with the simplest equipment. All we have to do is look up into the sky to see the effects of gravity—similarly all that is necessary to see atomic disintegration is to look through a spintariscopes. The Wilson cloud chamber which enables us to photograph as well as see, these atomic effects is a better instrument naturally—but is also more complicated, and requires considerably more equipment and care for the best results, but the spintariscopes can be used and demonstrated anywhere and at any time. "You'll have to excuse me for a moment," he said, "I'm going to look at a few atoms! That's not my imagination—that's my spintariscopes!"

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MEDICINE-MEN TECHNIQUE

IT WAS once believed that sickness and disease was caused by an evil spirit which had succeeded in entering the body. In order to bring the unfortunate person back to health, it was necessary to put him through a series of treatments involving violence, to drive the demon which caused the illness out of the body. This process, known as exorcism, was the function of the pagan priest, magician, or medicine-man. Many people suffered more at the hands of these men, than they did with their ailments. The skulls of some prehistoric men that have been found, show curious holes or borings. The reason for cutting a hole in the head was supposedly to furnish a way of escape for the evil spirit which was in the tormented body. Borings were no doubt performed in cases of severe headaches and other diseases of the head. The medicine-man was a respected and outstanding man among his group, and was thought to have a special ability to deal with evil spirits. Some medicine-men would stand before a patient and boast of their past achievements in dealing with devils. This was to frighten the demon and win the confidence of the patient. Medicine-men had many tricks of their trade. If one treatment didn't work, they would try another, each more weird than the other.

Sometimes just the chanting of magic formulas, or the use of potent numbers, names or charm remedies was successful. The medicine-man always dressed himself especially for the occasion. He was always decorated with charms and talismen which possessed magical powers against evil spirits. Sometimes the demon could be induced to leave the sick body by merely flattering him. Some magicians were considered so powerful that they could expel the evil spirit by merely commanding him to leave. Obscene dances and loud noises were sometimes used to scare the devil out of a person. If all these methods failed, it was necessary to use force. Sometimes attempts were made to nauseate the spirit by having the sick person inhale the most obnoxious odors. Or his body might be whipped or pierced with sharp instruments, or tormented in many inhuman ways in order to make the body an undesirable home for the unwelcome spirit. Medicine-men carried all sorts of herbs in their bags and used different mixtures for treating each disease. The knowledge of which herb mixtures possessed the right magical properties was a secret of their profession. Usually they mixed up the most filthy, distasteful concoctions for the patient to drink. These nauseating mixtures were supposed to make even the most stubborn devil give up. Only men with a great deal of physical resistance were able to live through such drastic treatments.

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